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Problems of Economics

ВОПРОСЫ ЭКОНОМИКИ

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IN THIS ISSUE

Some Methodological Problems in Preparing a Planning Balance of the Whole Economy.

Reserves and Perspectives for Increasing Production of Ferrous Metals.

Increasing Production and Reducing Costs of Grain, Milk and Meat – the Most Important Task of the State Farms.

Economic Problems of Developing a System of Machines for Cotton Production.

The Question of Stages in the People's Democratic Revolution in Poland.

Defense of Capitalism under the Mask of "Democratic Socialism."

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The Influence of Transportation on the Geographic Distribution of Industry.

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PROBLEMS OF ECONOMICS

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. *Bor*

ome Methodological Problems in reparing a Planning Balance of the Whole Economy

tremendous part in solving the problems of communist con-uction in our country is being played by the long-range plans levelopment of the national economy. As is known, the CC of CPSU and the Soviet government made a decision in 1957 to pare a perspective plan for the development of the whole SR economy for 1959-1965. Carrying out this plan will bring closer to the solution of the USSR's basic economic prob-n — in the shortest historical period to catch up to and sur-s the most advanced capitalist countries in per capita pro-tion.

An important part in preparing the state plans for the devel-nent of the socialist economy is the balance of the national nomy, the theoretical basis of which is formed by the Marx--Leninist theory of expanded reproduction.

Under the phrase the balance of the national economy, in the ctice of USSR state planning and state statistics, is under-od to be a system of the most general, mutually connected ices of the concrete material conditions and results of ex-nded reproduction in all branches and sectors of socialist iety. We have two types: the achievement balance of the nomy, which represents the account of the past; and the plan-g balance for the future. Both of them are based on Marx's eme of expanded reproduction as amplified and developed in nin's works.

n the achievement balance are reflected the results of com-ted processes of reproduction, the level of production and the ieved proportions between the departments of social produc-n, social sectors, individual branches, and relations between ial classes in their use of social products and national in-me. The achievement balance of the economy, prepared by Central Statistical Administration, is the starting point for preparation of the planning balance by the USSR State Plan-g Commission.

The planning balance of the economy has to give in a general m a picture of the whole process of socialist reproduction for planned period. Its indices should make it possible to de-mine the scale and level of all social production, the degree d direction of the changes in the main economic proportions. alysis of the data of the planning balance must help to deter-ne correctly the rates of expansion of social production, ac-mulation of national wealth, and the increase of the consump-n level of the workers.

The method of preparing a balance is one of the basic methods economic planning. The proportions which will be formed dur-the period of the plan's action are determined by comparing d coupling resources and needs. Technical-economic propor-ns and relations inside branches and among types of output d individual branches may be determined with a sufficient gree of precision on the basis of the system of material bal-ces of output and production capacities which are elaborated the preparation of the plan. But for the determination of the st important economic proportions of expanded reproduction is not enough to have a system of material balances. On the sis of the balances and production program of the national nomic plan one can form only a most general idea about these portions, one may determine only tendencies of change, which not enough for the planning of the economy. Only an analysis the indices of the economy's balance would make it possible find all the most important economic proportions: between partments I and II of the social product, between Iv + g and , between production and consumption, between consumption and accumulation, between industry and agriculture, among social forms of the economy and social classes in their dynamics, interconnections and interdependence.

But determination of the level and measure of change of these proportions is not the only purpose of the planning balance of the economy. This balance also makes easier the preparation of an economic model of the reproduction process in the planned period on the basis of approved general economic-political tasks of that period; on the basis of a determination of the tempos of development of the basic economic branches, the level of the accumulation fund and capital investment, and the growth of the economy and welfare of the population.

One frequently meets among economists the belief that the planning balance of the economy is a system of indices taken from the state economic plan, that is, a special division of the state plan, bringing together generalized indices. Such an idea of the balance cannot be considered correct. The balance of the national economy, so far as it includes a balance of reproduction of the product in the state production sector, is used as a tool for preparing the state plan. However, one should not forget differences between a balance of the economy and that state economic plan, differences which make the balance of the economy a special part of the plan. These differences consist of the following: the planning balance of the economy embraces all important moments and stages of expanded reproduction in socialist society: production, distribution, circulation and consumption, in their unity and interconnection. It includes indices which characterize the process of reproduction not only in the state sector but also in the kolkhoz-cooperative sector, as well as the output and use of products in the personal subsidiary farms of the workers, white-collar workers and collective farmers.

The basis for preparing the planning balance is the achievement balance, prepared by the USSR Central Statistical Administration. The schemes of both balances coincide on the whole. Thus it is possible to check how the most important economic proportions, calculated in the planning balance, were carried out in the past year.

The diversity and complexity of the problems which emerge in the process of preparing the planning balance, necessitated by a large number of various indices needed for the comprehensive characterization of the process of socialist reproduction, make it impossible to present the balance of the national economy in a single table. What we need here is a whole system of tables specially connected with each other. This system consists of the following parts: (a) a combined section of the national economy's balance which includes the combined balance of the economy, separate balances of reproduction in the state and kolkhoz-cooperative sectors, a balance of basic funds and a table of levels, proportions, and rates of development; (b) a balance of the social product; (c) a balance of the national income which includes a combined balance of production, distribution and final use of the national income, a balance of accounting relations of the socialist enterprises and individuals' farms with the financial system, a balance of income and expenditures of the population, balances of consumption and accumulation; and (d) a balance of labor resources.

Frequently the opinion is expressed in our economic literature that the process of social reproduction requires the preparation of two balances: a material balance of reproduction to characterize the material-physical side of reproduction, and a financial balance to characterize the value side of the reproduction process.

Combined Balance of the USSR National Economy for the Planned Year							
Stages of the process of reproduction	Total	The sphere of society			Social sectors		
		Production		Nonproduction	State	Kolkhoz-cooperative	
		Department I	Department II			Kolkhoz	Producers' and consumers' cooperatives
Funds at the beginning of the year Including production funds							
Labor resources at the beginning of the year (in millions of men)							
Factors of social reproduction: (a) average annual production funds (b) average annual labor resources (in millions of men)							
Production:							
A. Social expenditures Including (a) transferred value (b) newly-created value							
B. Social production (by place of its creation)							
Distribution:							
A. Distribution among sectors and departments through mechanism of prices							
B. Social product (by places of its realization)							
C. Distribution of the product by places of realization of value Including replacement fund, fund of the necessary product, fund of the surplus product							
D. A balance of distribution through the financial system and realization of services							
Circulation:							
A. Total realized							
B. Total acquired Including that acquired in department I, in department II, in the state sector and in the kolkhoz-cooperative sector							
Consumption:							
Including consumption for production (replacement of consumed means of production) and consumption for nonproduction purposes							
Accumulation:							
Including (a) production funds (b) nonproduction funds (c) reserves							
Total product used: Including national income (a) by the place of its creation (b) by the place of its realization (c) by the place of its use							
Funds at the end of the year Including production funds							
Labor resources at the end of the year (in millions of men)							

our view this opinion is mistaken. The process of reproduc-
n should be characterized in the unity of its value side and
terial-physical side. On this are based the schemes of re-
duction worked out by Marx and Lenin. On the basis of this
ty a scheme of the combined planning balance, as supplied
present by the planning organs, was built. (See the table
ve.)

The most important methodological question in the preparation
a combined planning balance of the economy is the determina-
n of the scales and rates of development of social production
its social and branch structure. Marxian economics teaches
t production dominates other moments of reproduction, plays
etermining part. Because of that the indices of the process
production of the aggregate social product lie at the base of
tables of the balance.

The aggregate social product of a socialist society is the gross
duct of the branches of material production, that is, the en-
e production of the economy, created during the year in the
nches of material production and used for material consump-
n, accumulation, formation of reserves and consumption by
population.

Connected with the problem of determining the scale of pro-
tion is the question of so-called double counting in the lim-
of the planned period. Some Soviet economists consider that
y the so-called final product must be reflected in the balance
he economy without double counting of the value of means of
duction. They point out that double counting does not enter
prices of products of department II, unlike the products of
artment I; because of that they suggest removing the whole
nover of value inside department I in order to obtain com-
ability of the products of departments I and II.

We believe this suggestion is a mistake. The purpose of pre-
ing a balance of the economy is to characterize the real eco-
nic relations and proportions among departments I and II
sectors and branches of the economy. It should reflect the
vement of real commodity masses circulating between enter-
ses independent of each other in respect to accounting. A
ance which has to deal with abstract indices cannot give a
rect presentation of the real connections and relations in the
nomy. The balance of the economy embraces all phases, all
ges of the reproduction process. The social product "manu-
tured" by methods suggested by some economists does not
ear in any of the phases of reproduction.

This does not mean that the analysis of the "final" product has
economic significance. But that analysis plays a limited part,
an be applied only to special economic calculations and in
paration of the balance of the economy, which should include
whole product of society.

Since commodity production is preserved under socialism,
roduction of the social product is realized in its value, mone-
y form. Since the scales, level and rates of the growth of
duction of the aggregate social product can be measured and
ermined only in their monetary expression, the problem of
ce formation is of tremendous importance for the preparation
he planning balance of the economy.

The measurement of the social product in money has, in fact,
sides. First of all we have to measure the dynamics of the
ume of output of the social product; determine the rates of
elopment of social production, the change in proportions a-
ng the branches of industry, between departments I and II, the
ial sectors, and the proportions of distribution and utiliza-
n of the consumption fund and accumulation fund. For this
pose the social product must be calculated in constant prices
the period which is taken as the base. But in such constant
ces it is difficult and frequently impossible to tie up the
ices of production, distribution and utilization of the aggre-
e social product. This makes necessary the evaluation of the
duct in current prices of realization.

Calculation of all indices of the balance in current prices of
lization makes possible the mutual tie-up of the indices of
duction and the indices of formation and use of income, the
ume of production and expenses of production, the income of
population and trade turnover, incomes of enterprises, the
get, etc. But the application of the existing system of prices
he balance of the economy for the evaluation of the individual
ts of the aggregate social product requires the solution of a num-
of economic problems.

There are substantial differences in the structure of prices for the products of various branches and social sectors of the economy. The prices for products of heavy industry (wholesale prices of enterprises) and tariff rates for the services of transport and communications include besides costs certain amounts of the net income of enterprises (profit). Prices of construction products (estimated) in fact do not include the element of net income of the enterprise. Prices in light industry and the textile industry as well as in industries producing foodstuffs as a rule include not only the net income of the enterprise but also the so-called turnover tax. Several types of prices exist for agricultural products. Under the existing system of price formation the part of the value of the product created in heavy industry, construction, agriculture and transport is realized not at the prices of products of these branches, but at the prices of their consumption, chiefly through a turnover tax. Correspondingly a part of the value created in the collective farms is sold in fact at prices of products of state enterprises. Because of this it is impossible to determine directly, using existing prices, which part of the social product is created in a particular branch (social sector, department) as distinguished from the realized part.

Lately with the help of a complex system of economic calculations in the planning and achievement balances of the economy, the net product is determined in each branch in prices approaching value, that is, the volume of the national income is determined at the place of its origin. However, up to now a method for re-evaluating the elements making up the replacement fund (material expenses in each branch) in prices approaching value has not been found.

In the combined balance table given above the social product and the national income by departments and social sectors are given at the place of their origin and realization. The size of the social product "by place of creation" is determined in theoretical units. In the social product only the national income is expressed in prices approaching the level of value. The replacement fund is estimated as a sum of actual or planned material expenses in the corresponding branch (department) of production. But even in this imperfect form this index is of great economic significance. Comparing the size of the social product at the place of its origin with the sum received from the realization in the branch (or sector) of a part of the social product, we obtain an index which gives an idea of the size of the redistributed value of the product through the system of prices between the collective farms and the state sector, between departments I and II.

In the process of distributing the value of the social product three parts are formed: the replacement fund, the fund of the necessary product and the fund of the surplus product.

Under socialism the means of production are public property and because of that the whole product of joint social labor is the property of all workers. But this does not mean that in the socialist system the division of labor time into necessary and surplus time and of the product into necessary and surplus product disappears. Surplus labor and surplus product are the necessary condition of existence and development of any society. "Surplus labor in general," pointed out Marx, "must always exist as labor above the measure of given needs." (K. Marx, "Capital," Vol. III, 1954, p. 832.)

The category of necessary labor expresses that amount of labor which at a given level of its development the socialist society can spend on maintenance of the production worker and upkeep of his family.

At the expense of the surplus product the society realizes accumulation, creates reserves and maintains workers of the nonproduction sphere, which includes workers in educational institutions, health protection, science, art, general administration, as well as the personnel of the armed forces.

In the combined balance of the national economy the necessary product represents the sum of all means of existence (expressed in money) which are received by production workers. Subtracting this sum from the total amount of the national income we obtain the size of the fund of the surplus product.

If distribution determines the share of the departments of social production, social sectors and social classes in the value of the social product, circulation brings to each owner of income corresponding to that share consumer goods or means of production needed by him. In other words, circulation appears as a necessary condition of the product's utilization for the purposes of consumption and accumulation.

Circulation of the social product is shown only in the combined part of the balance. Here it is shown who gets the product of the given department or production sector, where the department or sector acquires the necessary means of production and means of consumption. An analysis of the indices of this subdivision of the balance makes it possible to find out the character of the connections between departments I and II, as well as between the state and kolkhoz-cooperative sector in the realization of means of production and consumers goods.

The concluding stage of social reproduction is consumption and accumulation of the social product.

The combined balance of the national economy, under the heading of "accumulation," reflects the entire accumulation of society (including reserves) as a whole and by spheres (production and nonproduction), by departments of social production and by social sectors. In the grand total there is special index — "the fund for expanded reproduction" — which characterizes accumulation in the categorical meaning of the word, that is, an increase in the elements which make possible expanded reproduction. This fund for expanded reproduction consists of (a) accumulation of production funds (fixed and circulating) and (b) increase of the mass of consumption funds in connection with the growth of the number of workers occupied in the sphere of production.

The "consumption" part of the combined balance of the national economy reflects the whole current consumption of the social product, personal as well as for the purposes of production. The latter is equal to the replacement fund of consumed means of production. More complicated is the question of the magnitude of personal consumption by members of society occupied in the production and nonproduction spheres, in the departments of social production, and in the social sectors.

In preparing the combined planning balance of the national economy there are a number of important shortcomings and unsolved problems. Up to now statisticians have not yet worked out indices of reproduction of the social product in individual branches of production; so in the combined planning balance for the planned period the reproduction connections and relations between industry and agriculture, industry and other branches of production are not yet being calculated. For the same reason the planning balance does not reflect the proportions between production of tools of labor and production of objects of labor, between production of means of production for department I and production of means of production for department II. A very important but still unsolved problem is the computation of all indices of the combined balance of the national economy in prices approaching value (parallel to the balance calculated in realized prices). Such a balance would permit a better characterization of relations between the fund of consumption and fund of accumulation, proportions between industry and agriculture, production and circulation, the level of income and consumption by workers and kolkhoz farmers, etc. For the construction of such a balance it would be of great important to solve the problem of how to recalculate all elements of the replacement fund in prices approaching value. Further joint work by the economists and statisticians should be directed toward this end. However, even in its present imperfect form the combined planning balance makes it possible to determine the relations and connections between the state and kolkhoz sector in utilizing that part of the national income which is created in the collective farms. On the basis of the combined balance of the national economy a balance table is prepared characterizing the mutual economic relations of the state and kolkhoz sector (including subsidiary farms of the kolkhoz members), net income and distribution and use of this income.

The study of the process of social production cannot be limited to the analysis of the most general proportions and relationships which find reflection in the combined balance of the national economy. For a more concrete and detailed analysis of the various sides and aspects of the reproduction process one must use other parts of the balance of the national economy: the balance of the social product, the balance of the national income and the balance of labor.

The second division of the balance of the national economy — the balance of the social product — reflects the process of production and utilization of the aggregate social product during the planned period and those proportions which are formed among the branches of material production.

During the existence of Soviet power the production of the social product in our country has greatly increased. During just the period 1928 through 1954 the social product increased, in comparable prices, about eleven times. The increase in the absolute size of the social product was accompanied by a radical change in its structure. The basic part of the social product is now contributed by industry and in the composition of industrial production. The part of group A branches increased from 33.3% in 1913 to 70.8% in 1956. Proportions among other branches of the national economy have also changed substantially.

The balance of the social product shows how much of the product is produced in the country as a whole, how much by various sectors and in what form (means of production, consumer goods, products of industry, agriculture, construction, etc.), how much is utilized for replacement of the consumed means of production in each department or branch, for nonproduction needs in the whole country, for export, for formation of various funds, and for expansion of reserves.

The balance of the social product includes the following basic indices:

In the subject:

1. Production of the social product, including production in the state enterprises, cooperative-kolkhoz enterprises and personal subsidiary farms of the population.
2. Consumption of the social product, including (a) consumption for purposes of production (by branches), (b) personal nonproduction consumption (here are separately listed basic sources of satisfaction of the population's needs).
3. Accumulation, including accumulation of basic funds, of circulating funds, of reserves.

In the predicate:

A. Departments of social production (I and II).
B. Products by branches of production (industry, agriculture, construction, etc.).

The planning balance of the social product is used for determining production relations in the economy during the planned period. In addition it as well as other subdivisions of the balance serves as a tool for preparing the economic plan and for checking on its execution.

Recently the balance of the social product has been used at the preliminary stage of preparing the economic plan for determining such important mutually related indices of the plan as the volume of industrial and agricultural output, the volume of capital investments, the sum of incomes of individual classes, turnover of commodities, etc. The calculation of the preliminary balance of the social product makes it possible to prepare an economic model of the process of reproduction during the planned period. In the preparation of the preliminary balance for the planned year out of the whole group of the plan's indices the main branch of material production is singled out: industry. Next, using indices of the structure of the social product's balance for previous years, a balance system of mutually related indices of the economic plan is prepared. Of course, the making of such economic models makes it possible to obtain only a preliminary sketch of the plan but, what is important, in this sketch all branches of the economy, production, and nonproduction spheres are mutually tied in. Such a preliminary determination of the plan's indices on the basis of a balance of the social product may be used for the corresponding evaluation of the planned estimates by branches. The preparation of economic models has especially great importance for long-range planning.

When the material, labor and financial balances of the economic plan are prepared, the indices of production by branches on the basis of technical and economic calculations and various material balances are determined. A program is established for construction, the volume of transport work, the targets in respect to the size of the labor force, wage fund, growth of commodity turnover, etc. Then the balance of the social product acquires special significance. The indices of the state plan cannot be mutually tied up if the destination of the product which it is planned to produce is unknown. The plan should show which part of the products will go for personal consumption, which for accumulation, etc. Consequently, it is necessary to balance production and utilization

product. If the balance of the social product, as outlined s stage, shows that the most general indices of the economan are not tied up with each other, then the indices of varisubdivisions of the plan should be checked.

great importance is the third section of the economy's bal— the national income — which characterizes the process of rmation, distribution and utilization of income of various soorms of the economy and of classes of the socialist society.

e national income of the USSR is growing at tempos which nknown in any capitalist country. Our national per capita ne has increased thirteen times between 1913 and 1956, in the USA during the same period it increased less than and in England and France less than 1.6 times. Such high s of growth of the USSR national income demonstrate the advantages of socialism in the use of labor resources and aranteeing the uninterrupted growth of labor productivity se of production funds. In connection with this uninterruptnprovement in utilization of production funds the physical me of the national income is growing more rapidly than the l product. During the period from 1928 through 1954 the l product increased about eleven times, while the national me, as was mentioned, increased about thirteen times durne same period. During the period of the Fifth Five-Year the social product increased by 65% and the national in- by 71%.

e balance of the national income makes it possible to deine a number of important economic indices, in particular eneral volume of the produced and utilized national income, olume of primary incomes of workers occupied in material uction, the net income of the state, cooperative enterprises organizations and collective farms. This balance also charrizes the formation of social funds, financial resources, and ndary (derivative) incomes of the population as well as ulte incomes, the volume and structure of the ultimate utilin of the national income in the form of the funds of contion and accumulation. In its most general form the balance e national income includes the following indices:

e subject:

Sources of the national income, including production and other sources.

Distribution of the national income: (a) formation of the primary incomes, (b) formation and distribution of the social funds, (c) formation of ultimate incomes.

Ultimate utilization of the national income: fund of consumption, fund of accumulation, including the fund for increasing reserves.

e predicate:

Spheres of society: (a) the sphere of production, including state enterprises, kolkhoz-cooperative enterprises and farms, subsidiary farms of the population; (2) the nonproduction sphere.

Social classes: workers (including white-collar workers), peasants.

lices of production and distribution of the national income the most generalized characteristics of development of the uctive forces in the socialist society, of the growth of the rial welfare and cultural level of the population.

lculations of the size of the national income are used for king the correctness of the planned tempos of development proportions of various branches of the economy and of pro- ion sectors. For example, the lowering of the part of trade ransport in the national income signifies increasing pro- ivity of social labor and more rational organization of the ess of social reproduction. Of great importance is the anal- of the percentages which various sectors form in the total nal income. If in the analysis of indices of the expected nal income by branches and production sectors relations ned for this period appear wrong, then the figures of the for various branches and forms of the economy should be xamined. A close tie-up of the indices of the national in- e in the balance with all other divisions of the state plan make it ible to use this balance actively for the preparation of the econ- 's plan.

The size of the national income, realized in the state sector, may be checked through calculating and summing up the primary incomes of the population and state enterprises (wages and payments for social insurance, profit, turnover tax, interest charged for credit, local taxes) and, on the other hand, the correctness of the calculations of the primary incomes in preparing the plan may be checked through comparison with the size of the national income realized in the state sector.

In the practice of planning the whole economy only after several checkings and refinements of the calculations brought into the indices of the wage fund and incomes of the state, as well as into calculations of the net product by branches and sectors, equality is reached in the sum of the net product of the state sector with the sums of the primary incomes as reflected in the plan for labor and in the financial plan. In order to be able to find the correlation among the indices of the plan for the distribution of the social product and indices of income distribution, we construct in preparing the planning balance of the national income (a) the combined balance of the state of the accounts among the state, the cooperative organizations and enterprises and the population, which balance is prepared on the basis of materials of the state budget, the credit plans of the state bank and of the bank for long-term investments, and financial plans of the state insurance organization; (b) a balance of production, distribution and utilization of incomes received by the population and of the product produced in the personal subsidiary farms; this balance includes a balance of monetary income and expenditures of the population and a balance of products received from the collective farms and subsidiary farms.

Calculations of the national income are widely used for determining the level and dynamics of the gross nominal income, gross real income and actually spent incomes of social classes (actually spent incomes are equal to the gross real incomes minus the amount of total monetary savings of the population.

The last — the fourth — subdivision of the balance of the national economy — the balance of labor — gives the generalized characteristics of the expanded reproduction of labor power as a whole for the USSR and separately for the urban and rural population and gives indices of the growth of the social productivity of labor.

The planned character of the reproduction of labor power under socialism is one of the basic conditions which secures the planned character of the development of the whole economy. The combined balance of labor is a tool which helps to determine the most important proportions of distribution of labor resources in correspondence with the concrete tasks of this or that stage of socialist construction: (a) proportions of distribution of society's labor resources by forms of employment (national economy, training of personnel, domestic economy); ratios of distribution of workers occupied in the national economy by spheres of labor and branches of the economy, by social forms of the economy (socialist economy and small individual farming), by social groups (workers, white-collar workers, workers of household industry, kolkhoz farmers, uncooperated farmers); (c) ratios of distribution of labor resources between the urban and rural population and their utilization.

On the bais of the combined planning balance of labor the characteristics of the planned changes in the distribution of labor resources are given. Because of that the balance of labor is an effective tool in the preparation of the plan, an important implement for securing proportional distribution of social labor in the country.

This balance is prepared in the following form:

In the subject:

(a) labor resources — total; those occupied in the branches of the national economy; (b) occupied in the branches of material production — total, including those in department I, in department II, in separate branches of production (industry, agriculture, construction, transport, etc.); (c) productivity of social labor, including productivity by branches; (d) occupied in the nonproduction sphere, including those occupied by branches; (e) out of the total number of workers occupied in the national economy those working in socialist enterprises and in small individual farms and businesses; (f) out of the total number of workers occupied in the national economy the number of workers and white-collar

workers, members of the collective farms, cooperated workers in household industry, individual farmers, uncooperated workers in household industry.

In the predicate:

For the planned year: total, including: urban, rural, and absolute increase as compared with the past year; all this subdivided in the same way as above.

Up to 1957 the balance of the national economy as a whole, as well as the balance of the social product and national income, were prepared only for the whole country. With a change in the system of industrial and construction management the situation was greatly changed. In preparation of the long-range plan for 1959-1965 the state planning commissions of the Union republics, beside indices of the state plan for the development of the national economy, have to determine for the planned period the volume of the national income of the republic, the growth of real wages of the workers and white-collar workers and incomes of the collective farmers. These indices should also be determined in the annual plans for the development of the economy of the Union republics. In connection with this there emerge many complicated problems.

Naturally, general principles, the methodology of determining the volume of the national income and incomes of the population, are the same for the country as a whole as well as for the Union republics. However, many methodological questions of determining national income by the Union republics are new. The movement of commodity masses through which economic ties among the republics and regions are realized necessitates at the same time a movement of the corresponding masses of the national income. For example, sugar is produced in the Ukrainian Republic and is realized in the Uzbek Republic; cotton fiber produced in the Uzbek Republic is consumed by factories of the Ivanovo region, etc. Here a problem of income measurement arises: (a) produced in a given republic; (b) transferred into the all-Union fund or received from the all-Union fund; (c) realized for accumulation and consumption within the republic.

Beside movement of the commodity masses, of great importance for the solution of this problem is the determination of the incomes of the population in monetary form, because a substantial part of the incomes of the population of one republic are being realized on the territory of another republic (direct trips to health resorts, rest homes, etc., or through monetary remittances). Under the new conditions when work will be carried on in each Union republic to determine indices of the balance of the national income as well as the balances of the republics' economies as a whole, also considering that experience and statistical data will be accumulated, the most important problem will become the securing of comparability of these indices by republics. The different branch structures of industrial production in the Union republics, the variety of prices used in evaluating agricultural production and different structures of realization of agricultural products in different regions raise the problem of preparing a special system of price indices for securing comparability of data concerning the development of individual republic economies.

In the state plans of the Union republics and republic statistical administrations this complex work, new to them, has already started. They need the help of the scientists and economists and statisticians in the theoretical analysis of the problems that confront them. Only by the combined efforts of all Soviet economists and statisticians can this important problem be solved.

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eserves and Perspectives for Increasing Production of Ferrous Metals

n the report of Comrade N. S. Khrushchev to the Jubilee Ses-n of the USSR Supreme Soviet the task was set to increase in next fifteen years iron ore output to 250 to 300 million tons ear, pig iron to 75-80 million tons and steel to 100-120 mil-n tons. The solution of this grandiose task involves system-cally finding and utilizing the production reserves of ferrous tallurgy.

The directive of the 20th Congress of the CPSU foresees an rease of 19.7 million tons in pig iron production by 1960 as mpared with 1955; steel, 23 million tons; and rolled steel, 4 million tons. During these years it is planned to bring pro-tion capacities into action through capital construction for iron of approximately 16.8 million tons; for steel, 15.8 mil-n tons; for rolled steel, 16.3 million tons. At the same time of the total increase of production of ferrous metals fore-n for the Sixth Five-Year Plan 35% of pig iron, 47% of steel 40% of rolled steel should be obtained through better organ-tion of production and better use of production capacities in sting plants.

n 1956 the USSR produced 35.8 million tons of pig iron, 48.7 llion tons of steel and 37.8 million tons of rolled steel, or to 2.9 times more than was produced in 1940. Our metallurgy tinued to develop successfully in 1957: production of steel ched approximately 51 million tons; of pig iron, more than million tons.

However, ferrous metallurgy does not yet produce the amount ferrous metals needed by the national economy, and this holds the development of a number of important branches. This y be seen, for example, from the fact that in some branches machine building the volume of production of industrial prod-s is planned on the basis of available supplies of rolled steel iron, while the corresponding capacities of the machine lding plants are not fully utilized. Yet, if we had enough roll-steel, in 1957, with the existing capacities of the machine lding plants, additional thousands of automobiles, tractors, lroad cars for the main railroad lines, various types of agri-tural construction, and other machines and equipment could have n produced. In connection with this, one of the important tasks the seven-year long-range plan of development of the USSR ional economy, which is being prepared now, is securing a wth of production of ferrous metals which would outstrip the wth of demand for metal by the branches consuming ferrous tals.

Ferrous metallurgy can fully satisfy the demand of the na-hal economy for pig iron, steel and rolled steel in the next years only if the plan for 1959-1965, parallel to the con-uction of new metallurgical and especially iron mining and centrating (beneficiating) enterprises, includes measures for ter utilization and further increase of capacities of existing nts through removal of bottlenecks, modernization and ren-ation of obsolete equipment and wide application of the experi-ce of the best enterprises which have mastered new technolog-l processes and superior methods of production organization.

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An important factor in the further increase of production of rous metals is improvement of the work of blast furnaces, ich depends first of all upon supplying them with sufficient ounts of iron ore of good quality, flux and coke. A stable sup-of iron ore which would secure not only uninterrupted work blast furnaces, but also careful equalizing of the chemical and neralogical composition, that is, of their contents of iron and ica, are of decisive importance for rhythmic, highly produc-e work of blast furnaces.

Yet recently in some of the regions where our ferrous metallurgy is situated there appeared a serious discrepancy between the volume of the output of iron ore mined and the production of pig iron. Because of that some big metallurgical plants do not have sufficient reserves of iron ore and use the ore straight from the trains, so to speak. For example, in the ore yards of Azov Steel, as well as at the Voroshilov and Yenikeyevsk Plants, the reserves of the agglomerated ore with high iron content did not exceed 1.5-3.5 days' demand in September, 1957. This excludes any possibility of equalizing ore content before the agglomeration and blast-furnace charging and results in a violation of the technological regime of metal reduction in the blast furnaces.

The lagging of the output of iron ore is primarily caused by the systematic nonfulfillment of the plan for exploiting new iron ore mines. In the Fourth Five-Year Plan only 64.2% of the plan for exploiting new mines was carried out; in the Fifth Five-Year Plan the percentage amounted to 60.4, and in 1956 to only 50%. Especially slow was the plan of capital construction and the opening of new mines, open-pit mines and concentrating mills in the Krivoi Rog Iron Ore Basin. In 1956 only 46.5% of the plan for exploiting new ore mining capacity was carried out; in 1957, 69.5%. One of the causes for the discrepancy between the output of iron ore and the production of pig iron in the South and in the Urals is also the lagging of new mine construction and the work of increasing or maintaining production of iron ore at the existing mines. Such large iron ore enterprises as Vysokogorsk, Goroblagodat and Baikal as of January 1, 1957, have prepared and ready for mining not more than 25-50% of the plan; and in Krivoi Rog not more than 75-80%.

Parallel to the failure to carry out the plan for starting exploitation of new mining capacities substantial reduction is taking place in the existing mines of the industrial reserves of ores rich in iron content; because of that there is a general lowering of the quality of ores (lower iron content and higher silica content). This results in an overexpenditure of iron ore, agglomerate, coke and flux in the blast furnaces and increases the cost of pig iron. For example, in the Krivoi Rog Basin's ores in the last four years the iron content declined by 0.7-1.5% and the silica content increased by 0.6-1.0%. During the first half of 1957 alone the iron content in these ores declined, compared with 1956, by 0.70-0.75%. The same may be said about the Urals mines, where during eight months of 1957, compared with the same period of 1956, the iron content in the ores of the Magnitogorsk and Vysokogorsk mine administrations was reduced by 1-2% and in the ores of the Goroblagodat and Lebyazhinsk mine administrations by 3-5%. Reducing the content in the furnace charge by one per cent lowers the productivity of the furnace by 2.5-3%.

In order to avoid idle blast furnace time resulting from the shortage of iron ore, a number of metallurgical plants of the Urals and Ukrainian Republic use poor, sometimes even unconcentrated and unscreened iron ores. These ores are sent into the blast furnaces or are agglomerated directly, by-passing warehouses where equalization of ores is carried out. This increases fluctuations in iron and silica contents in the furnace charge by 3 to 5% from shift to shift, upsetting the normal progress of work and lowering the productivity of blast furnaces.

Under conditions in which the reserves of rich iron ores are limited, while the enormous growth of metal production requires greater and greater expansion of the raw material base of ferrous metallurgy, of special importance is the use of ores with low iron content after their preliminary concentration. The use of such ores is especially important for distribution of the productive forces in our country, because it permits the establish-

ment of ferrous metallurgy in regions which have no rich ores but have great reserves of poor ones.

Existing methods of concentration make it possible to obtain out of ores with 30-40% iron content a concentrate with iron content of 60-62% and of silica of 8-9%. At present the average content of iron in the ores used by blast furnaces is not more than 54-57% and of silica from 12 to 18%. But it is known that lowering the silica content by 1% would increase the productivity of blast furnaces by 2.5%; at the same time it would reduce expenditures of coke by 3%, of lime by 6% and the cost per ton of pig iron by six to seven rubles. Thus the advantages of the wide use of concentrates are self-evident.

Calculations show that if our blast furnaces were supplied with well-prepared iron ore concentrates in the needed quantities, the existing blast furnaces could produce annually at least three million additional tons a year. This means that our metallurgy, which has large steel capacity and rolling mill reserves can give the national economy approximately three million tons of rolled steel.

In order to overcome the disparity of iron ore output and of the quantity needed for pig iron production, and in order to secure the maximum load for existing metallurgical installations, it is important in the plan for 1959-1960 first of all to increase tempos of construction and to start exploitation of new mining and concentrating capacities so that in the near future necessary reserves of iron-ore mine capacity can be created.

The economic councils of the economic administrative regions of the RSFSR, Ukraine and Kazakhstan already are carrying out extensive construction work and bringing mines and concentrating plants into exploitation. In 1957 the Sokolov-Sarbai concentrating combinate produced its first ore. The construction of the Southern concentrating combinate has been completed. The Abakan mine is being brought into exploitation. Construction of a number of mines in the Krivoi Rog Basin is nearing completion. The capacity of a number of functioning mines, open-pit mines and concentrating plants is being increased through the reconstruction and improvement of their production-technological process. However, the present rates of construction and opening of the mines and concentration plants still do not remove the disparity between the output of iron ore and the demand for pig iron production.

In order to carry out the decisions of the 20th Congress of the CPSU for developing the iron ore base faster than pig iron production and for creating in the near future reserve capacities for mining and ore concentration, it is necessary to use ferrous quartzite more widely, as well as other ores with low iron content in Krivoi Rog. Because of this it is necessary to expedite by all means the construction of such concentration plants as Southern No. 2, New Krivoi Rog and Central, and to assure their functioning during the current five-year plan; to expedite designing and construction of the concentration combinates at other Krivoi Rog ferrous quartzite beds and also to increase the capacity of a number of mines and open-pit mines of the Krivoi Rog Basin.

It may be mentioned that bringing into exploitation the New Krivoi Rog and Central concentration combinates with a total annual capacity of about 11 million tons of concentrate containing 62% iron will considerably increase the high-quality raw material resources for the blast furnaces of the southern plants. The economic advantages of constructing concentrating plants is indisputable because extremely rich quartzite deposits will be brought into the sphere of metallurgical production containing 33 to 37% iron content, and these deposits will be mined by the cheapest method — open-pit mines.

However, the rates of construction of these plants are very unsatisfactory and, if they continue, the plants will not be brought into exploitation in the expected time. In spite of the fact that exploiting of the initial capacity of the New Krivoi Rog Enriching Combinate is planned for 1959, the construction of the basic industrial objects there has just begun.

The situation at the Central Enriching Combinate is no better, though its initial capacities should be in exploitation in 1960. The Dnepropetrovsk Economic Council, the Ukraine Republic State Planning Commission and the USSR State Planning Commission should take urgent measures for accelerating construction of these important projects for ferrous metallurgy.

A task of great importance is expansion of the iron ore base in the regions of the center, the Urals and Kazakhstan. For this purpose the use of extremely rich deposits of the Kursk magnetic anomaly and Kustanai deposits of iron ore should be expedited, as well as full-capacity construction and exploitation of the Sokolovka-Sarbai Enriching Combinate. The construction of the Kachkanar concentrating combinate and of the Second Magnetite mine at the Vysokogorsk deposits should be expedited, as well as of the iron ore mined at the Atasui deposits and open-pit work and removing of the covering layer in the Baikal, Vysokogo and Goroblagodat mines now in operation.

Of exceptional importance is expansion of the iron ore base for the Kuznetsk Metallurgical Combinate, which now uses annually up to 1.5 million tons of iron ore from the Magnitnaya mine, as a result of which the resources of iron ore for the Magnitogorsk Metallurgical Combinate are cut and long haulage by rail is increased.

Creation of a dependable iron ore base in Western Siberia is dictated by the fact that it is planned to build a large Western Siberian metallurgical plant with blast furnaces of great capacity which would need a great amount of iron ore. Up to recently the work of the geological survey here in search of the new ore deposits has been carried out unsatisfactorily and capacities for the output of iron ore increased slowly. Serious errors and mistakes were made in estimating available reserves, as a result of which, for example, the designing capacity of Sheregesh, Tashtagol and Tei iron ore mines (now in operation) are lower than they should.

The geological survey data of the last years as well as the long-range estimate of the iron ore deposits of Gornaya Shoria and Khakassia show that in the near future in western Siberia a powerful iron ore base can be created which can fully satisfy the iron ore need of the Kuznetsk Combinate and of the Western Siberian metallurgical plant which is now in the designing stage. The Kemerovo Economic Council, the Ministry of Geology and the RSFSR Ministry of Construction should expedite the work of constructing the iron ore base in western Siberia.

From 1958 through 1960 the shortage of iron ore at a number of metallurgical plants of the Urals can be eliminated to a large degree by more intensive utilization of the sulphide ores with low iron content, now lying on their dumps, through their enrichment. At the Magnitogorsk Metallurgical Combinate alone there are more than 70 million tons of such iron ores containing from 40 to 45% of iron. Concentrating these ores may bring the content of iron in the concentrate to more than 60%. For this purpose first of all it is necessary to expedite the construction of the plant for wet magnetic concentration of sulphide ores poor in iron content at that combinate as well as to take measures for increasing the capacity of the concentrating plants at the Nizhny Tagil Metallurgical combinate.

If a plant for wet magnetic concentration of such sulphide ores and two agglomerate roasters with a sintering area of 75 square meters can be put into operation, as well as more powerful air blasting machines at six blast furnaces, the Magnitogorsk Metallurgical Plant may be able to increase the pig iron production of existing blast furnaces no less than one million tons. And the needed capital investments for this purpose per ton of pig iron produced would be from two to 2.5 times less than the investments required for construction of new iron ore mines and blast furnaces.

In order to increase iron ore resources we should use the blast furnace dust more widely, the amount of which at southern metallurgical plant dumps is estimated in tens of million tons. The iron content of this dust is higher than that of the iron ore mined at some deposits of Krivoi Rog. Moreover, this dust could be enriched with the help of dry magnetic separation, which would increase the iron content in it by 1 to 2%. In view of this, more intensive utilization of this dust in the furnace charge of those plants which have agglomeration installations would help to utilize better the existing capacity of blast furnaces and to increase production of pig iron.

The raw material reserves can also be increased through the utilization of pyrate cinders, of which there are huge reserves at the dumps of the chemical plants. If we agglomerate them (and at the same time remove the sulphur) they will be valuable raw material for blast furnaces, because the iron content in them reaches 55%. However, at present they can be used only as a small addition to the agglomeration charge because the pyrate cinders contain a substantial amount of zinc which is detrimental to the fire-resisting masonry and metal sections of blast furnaces. Moreover, they contain many nonferrous and precious metals. Without

iminary removal of these metals through hydrometallur-
l methods their use in large quantities in the blast furnaces
ot advisable. In the plan for 1959 through 1965 construction
ld be projected of hydrometallurgical plants for the extrac-
of nonferrous metals from pyrate cinders as well as of the
ssary number of agglomerate roasters for caking these cin-
before using them in charges.

xpansion of the iron ore base will make it possible to use to
eater degree the capacities of the now functioning blast fur-
s, open-hearth aggregates and rolling mills.

ery important for increasing the productivity of blast fur-
s and, consequently, for increasing production of pig iron is
er preparation of the furnace charge. It is well known that
content of iron and silica in the mined ore fluctuates con-
rably — up to 10%. Variations in the composition of the ore
lied to the metallurgical plants produce harmful effect on
work of blast furnaces, make it impossible to establish a
le regime of smelting, and as a result, lower production of
ron. In view of this, in preparing the charge for furnace
lting it is important to stabilize the chemical and mineral-
al composition of the iron ore from one charge to another.
fluctuations of iron and silica in the charge, according to
nological instructions, should not exceed plus or minus
o 1.0%. At the Magnitogorsk Metallurgical Combinate the
ly productive work of blast furnaces is achieved through
lization of iron ore such that the content of iron and silica
es no more than plus or minus 0.5 to 1.0%.

reparing iron ore for the furnace charge must start at the
, as it is done, for example, at the Magnitogorsk combine.
s should have sufficiently large equalizing warehouses
necessary crane installations and installations for crush-
nd sorting of the ore by size. Yet in many enterprises in-
cient attention is paid to the question of preparing iron ore
smelting in the blast furnaces. That is why up to now equal-
on of the iron ore which undergoes agglomeration or bene-
ting or goes to the blast furnace is not yet properly organ-
.

ecently some metallurgical plants — Makeyevka, Chelyabinsk,
rozhye Steel and others — installed additional mine gantry
es for equalization of the iron ore. However, because of
ruptions in the supply of ore to the plants these cranes
d idle for a considerable time or are not used for their pri-
y purpose, while the content of iron not infrequently exceeds
o four per cent in the furnace charge going to the furnace
his results in breaking down the normal process of smelt-
in lowering pig iron production and in overexpenditure of
.

a number of mines up to now there are no warehouses for
lization of iron ore. It may be mentioned, for example, that
Krivoi Rog Iron Ore Basin, the basic supplier of iron ore for
netallurgical plants of the south, has not one equalization
house, though installation of such warehouses would im-
e the work of the blast furnaces of the southern metallur-
l plants.

great importance for the improvement of the technical-
omic indices of blast furnace work is improving the quality
etallurgical coke and keeping its composition constant. Coke
lied to the blast furnaces should have an optimal mesh com-
ion (lumpiness) and strength, should possess high heating
r and pyrometric capcity, constant physical properties and
nical composition, contain minimal quantities of ash, sulphur,
phorus and moisture. This would contribute to the lowering
ke expenditure in smelting iron ore, would increase the pro-
vity of blast furnaces and improve the quality of pig iron.

r improving the quality of coke it is very important to re-
the sulphur and ash content, especially for Donets coal, be-
e the content of sulphur in it reaches 1.75 to 1.80% and of
rom 10 to 11%. Experience shows that each 0.1% of sulphur
nt in coke increases coke expenditure per ton of pig iron
uced by 2 to 2.2% and lowers the productivity of the blast fur-
by 1.5-2%. One per cent of ash content above standard in-
ses the expenditure of coke and limestone per ton of pig
produced by 2 to 3% and lowers the productivity of the blast
ace by 2 to 2.5%. Moreover, increased ash content in coke
rs its mechanical hardness, and this, in turn, increases the
nditure of coke per unit of pig iron. From this it should be clear why it is so important to beneficiate coal. For this purpose it is necessary to expedite application in industry of the new method of beneficiating coal developed by the USSR Academy of Sciences' Institute of Mineral Fuels. The new method makes it possible to lower the sulphur content of Donets coal not less than 0.5% and of ash from 1 to 2%, to lower expenditures of coke and to increase the productivity of blast furnaces by 8 to 10%.

In the complex of measures necessary for preparing the charge for blast-furnace smelting, agglomeration of iron ores and improving the quality of the agglomerate is very important. Caked through sintering, the iron ore (agglomerate) has higher porosity and because of that better penetration by gases and reducibility as compared with wet lumpy ore (and especially as compared with fine ore) which makes easier the process of reduction of iron from ore, increases the productivity of blast furnaces, and lowers expenditures of coke per ton of pig iron produced.

Agglomeration is of special importance for Krivoi Rog iron ores, the majority of which consist of small fractions. The use of such ore in the blast furnaces reduces penetration of the charge by gases, lowers the intensity of the process of smelting and results in a large loss of iron ore in the slag taken from the furnace. The practice shows that for each 10% content in the form of fines (fractions less than five mm. in size) the expenditure of coke is increased and the productivity of the blast furnace decreased by 3%, while losses of iron ore in case of use of such ore and with usual pressure of gas on the charge hole reach 30 to 40% and even more. At the Magnitogorsk and Kuznetsk combines and at a number of other metallurgical plants which use agglomerates and lump iron ore the loss of blast furnace dust does not exceed 50 to 60 kg. per ton of pig iron produced; at the Makeyevka, Dzerzhinsk and Yenakiyevo plants, because of the shortage of agglomerate and high content of fines in the iron ore part of the charge, the losses of iron ore per ton of pig iron produced reach 140 to 200 kg.

The same should be said about agglomeration of the iron ores of the Urals deposits. They contain substantial amounts of sulphur, and this results in rejections of the product, increased expenditures of limestone and coke as well as increased cost of pig iron. In sintering of ores the sulphide sulphur in them is removed completely in the form of sulphur dioxide. In view of this the higher the portion of the agglomerate in the charge, the more productive is the work of the blast furnaces. Each 10% of the usual (not fluxed) agglomerate of the charge supplied to the blast furnace instead of wet iron ore increases the production of pig iron by 2 to 2.5% and saves 2% in coke.

The best indices of blast-furnace productivity under equal conditions can be obtained through the use in the charge of iron ore consisting only of agglomerate. That is why it is necessary to expedite in every way the construction of agglomerate roasters in the metallurgical plants which have blast furnaces. Only through an oversight in planning can the fact be explained that the blast furnaces of great capacity just brought into operation at the Voroshilov, Dzerzhinsky, Chelyabinsk and other plants experience an acute shortage of agglomerate and, because of that, the productivity of their furnaces is 10 to 15% below that planned.

The Soviet and foreign practice in which blast furnaces use agglomerate proves the economic advisability of agglomerating the iron ore before its use in blast-furnace smelting because, parallel with increasing the productivity of furnaces and lowering the cost of pig iron, substantial economies are obtained in iron ore and coke since less of them are needed per ton of pig iron. As a result the capital investments per ton of pig iron produced in the case of construction of blast furnaces with the necessary agglomerate factories are 10% lower than investments in blast furnaces using ordinary iron ore.

An important source of increasing production in ferrous metallurgy is wider application of the experience of pioneering enterprises in respect to the intensification of sintering of the agglomeration charge and increasing the productivity of the existing agglomeration factories. For intensification of the sintering process, for example, the method of hot recovery of the agglomerate is applied which makes possible an increase in production of agglomerate by not less than 10%. Yet at the agglomeration factories of the Chelyabinsk metallurgical plant, Baikal mining administration and a number of others, hot recovery has not yet been applied.

In addition, automation of the agglomeration process is being applied too slowly, yet this may increase the pro-

ductivity of existing agglomeration roasters by 5 to 10%.

At a number of metallurgical plants the output of agglomerate may be increased through enlargement of the useful sintering area at the existing agglomeration roasters and increasing the power of exhausters. For example, at the Zaporozhye Steel Plant an increase of the sintering area has been designed in each of the six existing agglomeration roasters from 5 to 65 square meters with simultaneous reconstruction of exhausters. This will permit, with minimal capital investments, increasing production of the agglomerate at the plant by 30 to 35% and will be equal to installing two new agglomeration roasters. Increasing the power of exhausters at the existing agglomeration roasters will in itself result in a substantial effect, because it will make it possible to increase the thickness of the caking layer of the charge and, consequently, to increase the productivity of the agglomeration roasters.

Many years of experience of the pioneering plants convincingly prove the advisability of applying the fully fluxed agglomerate in the furnace charge. It is known that the iron ore fed to the blast furnaces or agglomerate roasters contains from 12 to 18% silica. A large amount of silica is also present in the coke ash. The presence of free silica in the furnace charge ruins the fire-resisting materials of the blast furnace, increases the content of sulphur and phosphorus in the pig iron, causes deterioration of its quality and increases the cost of further processing into steel. In order to remove the harmful influence of silica, limestone is added to the furnace charge which, decomposing at high temperatures, frees lime which chemically combines not only with silica, but also with sulphur and phosphorus, turning into slag.

However, at the time of the decomposition of the limestone into lime and carbon dioxide a large amount of heat is lost, the productivity of blast furnaces is lowered and the expenditure of coke per ton of pig iron is increased. In view of this the blast furnace operators of the Magnitogorsk Metallurgical Combinate in 1949-50 transferred the operation of decomposing limestone from the blast furnace to agglomeration roasters, adding to the agglomeration charge for this purpose finely crushed limestone in quantities which secure full fluxing of silica, sulphur and phosphorus contained in the charge. This necessitated a capital investment of about ten million rubles in the construction of limestone-crushing equipment; but it great improved the calorific regime of the blast furnaces and improved the technical-economic indices of their work. The use of fluxed agglomerate under the conditions at the Magnitogorsk Metallurgical Combinate made it possible to increase production of pig iron in the existing blast furnaces by 13 to 16% and increase agglomerate roaster productivity by at least 20% compared with the use of ordinary agglomerate.

But for highly productive blast-furnace work it is not enough to ensure a supply of fluxed or ordinary agglomerate with high iron content. It is also necessary that the agglomerate loaded into the blast furnaces be homogeneous in its chemical and mineralogical composition and have a high degree of reducibility. At the plants which have their own agglomeration factories these requirements are basically satisfied. But the situation is different when the agglomeration factories are not at the metallurgical plants but are part of the mining enterprises. For example, the agglomerate which is supplied to the blast furnaces by the agglomeration factories of the Baikal and Kamysh-Burunsk Mines and Southern Beneficiating Combinate has great variations in the iron and silica content and low basicity. The Kamysh-Burunsk Factory frequently supplies Azov Steel with completely unfluxed agglomerate. Moreover, because of the large number of loadings and reloadings involved the agglomerate reaching the blast furnaces contains large quantities of small fractions and this, beside increasing agglomerate losses, also lowers the effectiveness of its application. Thus our conclusion is: agglomerate factories are an inseparable part of the blast furnaces; they should be built at the metallurgical plants and not at the mines.

For a correct solution to this question it is very important to combine enterprises, that is, to create a complex of enterprises under the same management, uniting iron ore mines, beneficiating and agglomerating factories, coke-chemical and metallurgical plants.

The experience of the Magnitogorsk and Kuznetsk Metallurgical Combinates convincingly proves the advantages of larger enterprises uniting technologically and economically related branches of production. Since they have broad possibilities for the application of new technological processes, for removing bottlenecks, increasing the quality of raw and other materials and for the most rational use of material and power resources, they succeeded in obtaining the best utilization of the metallurgical aggregates and the lowest cost of pig iron, steel and rolled steel.

This valuable experience was used by the Sverdlovsk Economic Council which, in 1957, organized the Nizhny Tagil, Serov, and Alapayevsk metallurgical combinates. This experience should also be widely applied at the metallurgical enterprises of the center and south.

The blast furnaces of the metallurgical plants of the south do not have sufficient supplies of dolomitized limestone, and this prevents wide application of available technology for the production of pig iron with low manganese content. Yet without any capital investment application of this technology would make it possible under conditions of southern metallurgy to increase the productivity of blast furnaces by 3 to 4%, lower the expenditure of coke by 3 to 3.5% and lower the cost of pig iron by 6%. However, even with the available resources of dolomitized limestone it is possible to increase the production of pig iron using small amounts of such limestone and large amounts of alumina. This experience should be spread to all metallurgical plants in the south. It is also necessary to take decisive measures for accelerating the opening of mines producing dolomitized limestone in the south so that the needs of the metallurgical plants of the Ukraine and the southern and central regions of the RSFSR for this flux material can be satisfied.

An important source for increasing the productivity of blast furnaces is raising the temperature and maintaining constant increased moisture in furnace blasting. Each 100° C raise in the blasting temperature increases the productivity of the blast furnace at least 3% and at the same time lowers the expenditure of coke. Yet in a number of metallurgical enterprises the question of raising the temperature of the blast supplied to the blast furnaces is not getting proper attention. Here is one characteristic example. At the Magnitogorsk, Nizhny Tagil and Kuznetsk Metallurgical Combinates as well as at the Serov, Zaporozhye Steel and other plants the temperature of the blast reaches 800 to 900°, while at the Dzerzhinsky Plant, which has the most modern blast furnaces, it does not exceed 650 to 750° C. The situation at a number of other plants is similar.

In order to increase the capacity of pig iron production with a relatively small investment of capital it is necessary at the time of the next capital repairs to increase the useful volume of the existing blast furnaces. This may be done through the use of thiner lining of the furnaces with fire-resisting materials as well as through partial alterations of the metal constructions of the furnaces. In recent years such alterations were made in some blast furnaces of the Nizhny Tagil and Kuznetsk combinates as well as at the Dzerzhinsky and Stalin plants, and this considerably increased the productivity of their blast furnaces. At the Magnitogorsk Combinate, at Dzerzhinsky, Zaporozhye Steel, Makeyevka and other plants there are blast furnaces of useful volume from 950 to 1,200 cubic meters which may be reconstructed so that their volume can reach 1,300 to 1,400 cubic meters. The plans concerning the increase of the useful volume of the existing blast furnaces were worked out by Gipromez some years ago and they should be carried out.

During the postwar five-year plans more than 50% of the blast furnaces of ferrous metallurgy began to operate with increased gas pressure in the charge hole, making possible more effective use of the reduction power of oxygen in the blast furnace, lowering the expenditure of coke and increasing furnace productivity. Experience shows that an increase of gas pressure to 0.7 gauge atmosphere will make it possible to increase the productivity of blast furnaces by 7%, lower the expenditure of coke per ton of pig iron produced by 3 to 5% and cut down the loss of dust by 35 to 40%. Even greater increase in productivity of blast furnaces may be achieved through an increase of the gas pressure to 1.0 to 1.5 gauge atmospheres. However, at present, in view of the lack of adjustment to such changes of the structural

el sections in a number of blast furnaces and the absence of werful pressure blowers, only three furnaces use pressure of re than 1 gauge atmosphere, while others frequently work at as pressure not more than 0.5 to 0.6 gauge atmosphere and s lowers their productivity.

A substantial increase in productivity of blast furnaces may secured through a blast enriched with oxygen. The experience the Nizhny Tagil Metallurgical Plant shows that the use of oxen in the production of ferromanganese and ferrosilicon ineases the productivity of a blast furnace by 50 to 80%, the proction of foundry iron by 20% and of cast iron for steel manuturing by 15%. The experiments carried out at the Nizhny gil Combinate also show the possibility of increasing the oductivity of blast furnaces producing cast iron for steel mancturing with the same method. However, this progressive asure has not yet found application because of the insufficient pacity of existing oxygen equipment and the unsatisfactory conuction of new equipment.

Great possibilities for increasing pig iron production are conted with cutting down the idle time of the blast furnaces. It known that the idle time of a modern blast furnace of high caity just in one day results in a production loss of 2,000 tons pig iron. Yet a struggle for cutting down idle time of blast fures is not carried on in all plants. At the Magnitogorsk and znetsk combinates and in the Zaporozhye Steel and Serov nts the idle time of blast furnaces in 11 months of 1957 was more than 0.2 to 0.6% of the nominal time; for all blast fures in our country the average during the same period aunted to 0.9%. Yet in the Chelyabinsk, Voroshilov, Dzerzhin and other plants it amounted to 1.1 to 2.1%. If all metalgical plants would cut their idle time to the level of the adced ones, the national economy would obtain at least 160,000 s of pig iron a year from the existing blast furnaces.

Practice shows that expenditures needed for carrying out asures resulting in better utilization of existing blast fures repay themselves in a short time, frequently in a few nths. This proves that the economic advisability of carrying these measures is beyond doubt. Enough, for example, to that carrying out only a portion of the above enumerated asures at the Magnitogorsk Metallurgical Combinate made it sible to obtain the best coefficient of utilization of the blast naces' useful volume, the lowest expenditure of coke and the est cost of pig iron in the entire country. For example, dur11 months of 1957 the coefficient of utilization of the useful ume at the Magnitogorsk Combinate was 0.63 and expenditure oke per ton of cast iron for steel manufacturing 663 kg., le for the blast furnaces of the USSR the corresponding figs were 0.79 and 817. But this low coefficient is not the limit. ome months of 1957 the coefficients of blast furnaces No. 7 No. 8 reached 0.58 and 0.59. This example convincingly ws what huge possibilities for increasing production our fers metallurgy possesses and especially metallurgy of the south re, for the same period, the corresponding figures were 4 and 887.

arrying out measures to improve the utilization of the fures and increase the capacity of the existing metallurgical aggates considerably increases the labor productivity of blast nace workers. For example, if we take as 100 the productivof labor per worker of the blast furnace division of the gnitogorsk Combinate — the most advanced from the point of v of mastering the best technological processes—at the Kuzsk Combinate labor productivity amounted to 95.5, at Chelyask to 66.7, at Zaporozhye Steel 61.5, Makeyevka 49.1, Dzerisky 39.2, Voroshilov 35.5, Kramatorsky 21, and the average all ferrous metallurgy plants was 34.3. The cost per ton of t iron for manufacturing steel at the Magnitogorsk Combinate .5 to 2.9 times lower than at the majority of metallurgical nts. A similar situation exists in steel and rolled steel protion.

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he steel-producing aggregates have great possibilities for easing steel production. For example, at the Magnitogorsk, netsk, and Nizhny Tagil Metallurgical Combinates and at the orozhye Steel Plant production of steel per square meter of sole of the furnace per calendar day during 11 months of 1957 unted to 8.9 tons; yet the average for open hearths of the metallurgical plants of the whole country for the same period was only 7.3 tons and at such big plants as Dzerzhinsky and Makeyevka — only 6.9 and 7.1 tons.

An increase of production of steel per square meter of the sole of the open hearth to the level reached by the best enterprises would result in an enormous increase of steel production at the existing aggregates. In order to achieve this it is necessary first of all to cut down the idle time of the open hearths spent on cold and hot repairs on which, on the average, the ferrous metallurgy plants lose more than 11% of their calendar time. At the same time at the Kuznetsk and Magnitogorsk Combinates, at Red October and other plants, the idleness of open hearths did not exceed 7 to 8%.

In the plants of the south the losses of time in idleness due to the repair of the bottom are still too long: they reach 4.6% of the calendar time. At the Kuznetsk Combinate, as a result of the good quality of current repairs and good care taken of the open hearths, the repairs of the bottom take two to three times less time. If all plants would cut down the idle time to the level of the best, the national economy would obtain from open hearths about two million tons of steel a year.

The enterprises of ferrous metallurgy have all the possibilities available for cutting down the idle time spent on repairs of open hearths. At present about 80% of the ferrous metallurgy plants have highly fire-resistant chromomagnesite and magnesium chromite roofs. At many open hearths forsterite or high-alumina brick is used for the masonry of the checkered brickwork of regenerators. Application of these fire-resisting bricks lengthens the period between repairs by two to three times as compared with Dinas brick used for roofs and this makes it possible to carry out the process at higher temperatures and, consequently, to cut down the length of smelting heats.

However, not all plants have fully utilized the advantages of these refractors. At the Kuznetsk Metallurgical Combinate, Zaporozhye Steel and other plants the length of the operation of an open hearth with chromomagnesite roofs reached 600 heats and more; but at some plants, because of poor servicing of the open hearths, violation of the technological regime of the heats and low quality of the chromomagnesite bricks, the length of the campaign for the same type of open hearths does not exceed 300 to 350 heats. Careful servicing of the equipment, strict observance of technological requirements, avoiding violation of the repair schedule and high-quality repair work — all this will make it possible greatly to increase steel production at the functioning steel plants.

Of great importance for increasing steel production is the application of oxygen for intensification of steel production. The directives of the 20th Congress of the CPSU foresee an increase of steel production with the application of oxygen of about 40% of total production. Application of oxygen for intensification of open-hearth steel production will make it possible almost to double the open-hearth capacity if only they are supplied with sufficiently powerful cranes, transportation, accessories and aggregates. In air enriched with oxygen, fuller combustion of fuel in the effective space takes place and this increases the thermal capacity of the open hearths and their productivity. Moreover, application of oxygen makes it possible to obtain high-grade steel with minimal content of harmful impurities.

The experiments carried out at the Zaporozhy Steel Plant show the possibility of increasing the productivity of open hearths with application of oxygen even under present conditions at least 25 to 35%. For example, the Nizhny Tagil Metallurgical Combinate is successfully applying oxygen, after completion in 1956 of a powerful oxygen station. Yet at some plants this important factor of increasing the productivity of steel-producing aggregates is poorly utilized. The Makeyevka Metallurgical Plant, where an oxygen station also started operation in 1956, has not yet improved the work of its open hearths. The Azov Steel Plant also utilizes oxygen ineffectively. At the Dzerzhinsky Plant, the Magnitogorsk Combinate and a number of other plants, in spite of the availability of equipment, technical documentation and means of financing construction, construction of oxygen installations was delayed.

Especially effective is the application of oxygen in production of converter steel. Such steel, produced with the application of oxygen, is not below that produced in open hearths in quality, but it does not "age," because it does not contain nitrogen. Thus, application of oxygen opens new possibilities for further develop-

ment of this most effective method of steel production. That is why it is so important to accelerate construction of oxygen installations at modern open hearth and conveyer departments.

A considerable source for increasing steel production is cutting down the length of heats. Many of the best steelworkers using the advantages of the chrome-magnesite roofs, applying compressor and turbine air for increasing the thermal capacity of open hearths, and strictly following the technological regime of smelting, reduced the length of heats by 1.5 to 2 and even more hours. An important production success was obtained by the steelworkers Comrades A. Serkov, V. Ignatov, V. Yakovlev and D. Trubnikov of Stalingrad Red October metallurgical plant No. 14. On the average they cut down the length of heats by two hours and in many cases their speeded-up heats took only five hours. In eight months of 1957 the collective of this open hearth carried out 94% of all heats by these methods and produced 8,450 tons of steel above the eight months' plan. If all open hearths cut down the length of heat only 30 minutes, the national economy would obtain at least two million tons more steel annually.

However, cutting down the length of heat does not depend only on the steelworkers. For the smooth work of the open hearth at a high productive level and with minimal time spent to produce steel it is necessary, first of all, to supply the open hearth without any interruption with good-quality charge. We cannot reconcile ourselves with the state of affairs when many open hearths stand idle much of the time because they do not have pig iron and scrap iron and therefore fail to produce a large amount of steel, overspend fuel and increase the cost of metal. The bases for preparing scrap iron — Vtorchermet — do not have a sufficient number of powerful presses for packaging light scrap iron and shavings into heavy packages. Because of the low quality of delivered scrap iron the steelworkers spend two to three times more than the scheduled time in unloading the metal charge into the open hearth and thus lengthen the heats.

In order to cut down the length of heats and increase the productivity of open hearths of great importance is supplying them with Martin ore. Lately the reserves of such ore in the Urals were sharply reduced. Production of such ores at the Krivoi Rog Basin also was reduced and because of that many plants in the south frequently use ores with high silica content. The use of such ores in the open hearth furnaces results in violation of the technological regime of steel production, lengthens the time needed for a heat, prematurely wears out the refractory lining and lowers furnace productivity. It is necessary to take measures for the increase of production and beneficiating of Martin ores not only through an increase in the capacity of existing enterprises, but also through construction of new mines and beneficiating capacities. In order to increase the reserves of such ores we should expedite construction and exploitation of the mines at the Mikhailovka and Lebedinsk deposits, increase the capacity of the existing mines at the Krivoi Rog Basin, and also secure an increase of reserves in the Urals.

Large reserves for increasing production are available at our rolling mills. Compare, for example, the current idleness of rolling mills. While such idleness at a wire-making mill of the Magnitogorsk Combinate during the first half of 1957 amounted to 7.1% of the working time, the idle time of a similar mill at the Makeyevka Plant amounted to 11.3%. Current idleness in a number of functioning rolling mills amounts to more than 25 to 30% of the working time. And this does not include idleness resulting from planned preventive repairs, days off and holidays. The leading workers of the rolling mills achieve high productivity of these mills through improvement in the quality of work, through strict observance of the technological regime of reheating metal before its rolling, increasing shrinkage of metal and increasing the speed of rolling. This experience may be utilized by all workers and it is necessary persistently to apply it at every rolling mill, at every heating furnace.

The directives of the 20th Congress of the CPSU outlined an extensive program for increasing productivity of bent shaped profiles from sheet, strip and bent iron as well as an increase in production of rolled steel products now in short supply and of profile pipes. Increase in production of economical, lightened profiles and especially of profile pipes and bent shaped profiles produced by hot rolling would make possible an economy of metal up to 20 to 30% in the production of machines and structural steel sections, and this would considerably increase the resources of ferrous metal rolling.

However, these measures are penetrating production slowly. The plans for mastering production of new economical profiles are not carried out from year to year. We are producing 2.5 times less profiles by hot rolling than the United States. Bent profiles are produced only in small quantities and frequently they do not find customers because our machine-building plants are not prepared for their utilization.

Because of the shortages of a number of types and profiles of rolled steel and especially of sheet, cold-rolled and bent profiles as well as of economical hot-rolled and bent profiles, the consumers receive from metallurgical plants rolled steel of larger sizes than is necessary and this causes an overexpenditure of metal in their mechanical processing and results in heavier and more expensive machine-building and construction products.

A substantial improvement in utilization of the productive capacity of the functioning rolling mills and increase of rolled steel production may be obtained through an increase in production of rolled steel from ingots, billets and bars. How great are the losses of metal in rolling may be seen from a comparison of expenditures of ingots per ton of the same type of rolled products at various plants. For example, for rolling one ton of rails the Kuznetsk Metallurgical Combinate spends from 5 to 6% less metal than Azov Steel and from 8 to 12% less than the Dzerzhinsky and Petrovsky plants.

For a number of years the reconstruction works for increasing the productivity of blooming mills at the Makeyevka Metallurgical Plant have not been carried out. Because of the shortage of suitable steel, the functioning rolling mills at that plant are using only from 75 to 80% of their capacity. A similar situation is observed at other plants.

The high tempos of development of our national economy, especially of the machine building and construction industry, set before ferrous metallurgy the task of considerably increasing metal production, expanding the assortment of rolled products, and increasing production of economical profiles of rolled steel and pipes. Improvement in the utilization of reserves of the existing plants through all available means is an important condition for achieving this task.

Benediktov *

ıcreasing Production and Reducing Costs of rain, Milk and Meat – the Most Important Task of the State Farms

The state farms are acquiring greater and greater importance the development of agricultural production in our country. As rge state enterprises they make it possible to use modern tech- logy and the land assigned to them with the greatest economic sults, to increase the output of agricultural products and at e same time to lower the expenditure of labor and material eans per unit of output.

In the last four years the scale of agricultural production on e state farms has greatly increased. The state farms opened ore than 15 million ha. of virgin and long-fallow land. Their al sown area more than doubled and the area under grain more ın tripled.

The growth of the grain economy on the state farms of the nistry of Agriculture may be characterized by the following ta:

	1953	1954	1955	1956
rea under grain				
millions of ha.	7.3	8.9	17.3	21.7
percentages	100.0	122.0	237.0	297.2
ross grain harvest				
millions of centners	70.0	72.5	100.9	217.5
percentages	100.0	103.0	144.3	311.0
ields per ha.				
centners	9.5	8.2	5.8	10.0
percentages	100.0	86.0	61.0	106.0

Because of expansion of the sown area and increase in gross tput of grain, the part of the state farms in the over-all pro- rement of grain in the country has considerably increased. 1956 the state farms delivered to the state 903 million poods grain, or 4.6 times more than before mastering the virgin ds. They also increased output and deliveries to the state of atoes, vegetables and animal products.

The growth of commodity production of the state farms in com- rable prices may be seen from the following table:

	1953	1954	1955	1956
otal production				
billions of rubles	10.5	11.6	12.9	17.2
percentages	100.0	110.1	122.8	163.6
including:				
agriculture proper				
billions of rubles	3.0	3.3	3.9	8.7
percentages	100.0	108.7	128.9	288.2
livestock breeding				
billions of rubles	7.5	8.3	9.0	8.5
percentages	100.0	110.7	120.3	113.3

State farm agricultural production expanded further in 1957. 1957 the state farms of the USSR Ministry of Agriculture in te of the drought in a number of regions of the country de- ered to the state more than three times as much grain as in 53; potatoes 6.2 times, vegetables twice, and sunflowers 2.5 es as much. They also substantially increased animal prod- s deliveries to the state: 964,000 tons of meat (1.7 times the 53 level), 3,891,000 tons of milk (2.4 times), 707 million eggs 5 times), 691,000 tons of wool (2.2 times the 1953 level).

inister of Agriculture, RSFSR

The successes achieved in the development of the state farms, and first of all in their grain production, provide a basis for the hope that the state farms will make a worthy contribution to the solution of the problem of catching up with the United States in per capita output of milk, butter and meat. Collectives of workers and specialists of many state farms are now aiming at the production of 100 to 150 centners of meat and 400 to 800 centners of milk per 100 ha. of farmland.

Of especially great importance at the present stage of communist construction is the question of increasing labor productivity and lowering expenditures per unit of output not only in industry but also in agriculture. The costs of the state farms' products and the level of labor productivity in the final account serve as generalized indices of the production-financial activity of each state farm, determine its profitability, and are indicators of skill in managing the farm. Because of that the state farm workers have this task before them: through a rapid and uninterrupted increase of production to secure high profitability in each state farm on the basis of comprehensive development of all branches of agriculture, rational utilization of land and all means of production, strengthening of cost control and lowering the costs of production.

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The state farm system as a whole is, beyond doubt, profitable. The state's receipts from realization of state farm products in the final account are higher than its expenditures for their production. This means that the output of agricultural products on the state farms—the main purpose of which is the satisfaction of the growing demand of the country for foodstuffs and agricultural raw materials—is also a substantial source for the state for accumulations for expanded socialist reproduction. Because of that it is important for the state that each state farm fully cover, even more than cover, its expenditures by means of monetary receipts in the realization of its products at established delivery prices. As is known, this is the basis of cost control on the state farms.

The abolition of state subsidies in April, 1954, and the introduction of new zonal delivery prices established after considering the actual costs of production on state farms in each particular zone and on a level such that the monetary receipts of the state farms from the realization of products would not only cover the normal expenses of production but also make it possible to receive profit from agriculture and livestock established a direct connection between financial position of each state farm and its carrying out of the state plan. Their own income became the only source for covering production expenditures on the state farms and for formation of necessary accumulations. This strengthens control by the ruble on the state farm, spurs the economy of labor and material expenditures in output of agricultural products and creates new possibilities for further reducing product costs.

The increase of profitability of the state farms is also helped by the change in the practice of agricultural planning. State farm workers now have broad freedom in solving questions concerning the development of their production, making decisions as to the size of the sown area, its structure, the yields of agricultural products, number of livestock, its productivity, etc.

Under such conditions success depends to a great degree upon the kind of management the farm has. In order to manage properly, it is necessary to master the economics of state farm production, to spend the state means economically, wisely. The state farms have great possibilities for lowering the costs of production of agricultural and livestock products and, conse-

quently, for increasing the profitability of each branch. However, there are still quite a few state farms which produce an insufficient quantity of products per 100 ha. of farmland and at a high cost. Because of that they work at a loss.

Below are figures of the actual costs per centner of basic products on the state farms of the USSR Ministry of Agriculture in 1950 and 1955 (in rubles):

	1950*	1955
grain	50.80	45.85
raw cotton	182.61	179.15
milk	129.80	117.46
beef (on the hoof)	651.26	659.86
pork (live weight)	1508.47	976.97
wool	1708.54	1575.81

As may be seen from this table, during the years of the Fifth Five-Year Plan the cost of production on state farms was reduced little, and the cost of one centner of beef has even increased. In 1955 many state farms ended their business year with a loss.

In 1956 the state farm system as a whole made a profit of 315 million rubles. However, in that year not all of the state farms made a profit. For example, the state farms of Kazakhstan, Uzbekistan, Georgia, Azerbaidzhan and Turkmenistan made a profit, while the state farms of the Russian Federation, the Ukraine, Belorussia, Latvia, Lithuania and Estonia, as a whole, suffered losses. As to the branches of production in 1956, those profitable were production of grain, cotton, tea, sunflowers, sugar beets, wool, eggs, Astrakhan skins and fur. In other branches expenditures of production were higher than monetary receipts.

Let us consider the question of the cost of state farm products and ways to reduce it.

In 1956 the state farms received the largest profits from the realization of grain; they amounted to 1,800 million rubles. Such a large profit from grain production was the result of the state farms' opening virgin and long-fallow lands and harvesting a good crop. Very cheap grain was obtained in 1956 from the virgin lands. For example, in the Altai the new state grain farms (except for the state farms in the Kulunda steppe, because of a severe drought there), the average cost per centner of grain was 24.40 rubles. In a large area of such state farms, production per centner cost only from 17 to 19 rubles. For the country as a whole production of one centner of grain on the state farms was 32.50 rubles, or 29% lower than in 1955.

Thus, the results of the work of the state farms in 1956 proved in practice that it is possible to reduce substantially the expenses of grain production. This fact is of great importance. Grain is the basis of all agricultural production. The level of grain costs largely determines the profitability of the vast majority of state farms. At the same time the results achieved should be considered only as a first step in utilization of the reserves for reducing production costs in this basic branch. This may be seen from the following table concerning the structure of costs per centner of grain on the state farms in 1956.

As we see, the wages, seed, and overhead expenditures make up most of the expenditures for grain production. Reducing these items is a source for further lowering the cost of grain.

If we examine the changes of costs over a number of years we see that the cost of grain is closely connected with yields; the higher the yields, the cheaper the production of grain on state farms. For example, in 1953 the average grain yield in the state farm system was 9.5 centners per ha. and the cost—38.22 rubles per centner. In 1956 the yields rose to ten centners per ha. and the cost went down to 32.50 rubles. Consequently, increase of yields is the main source for lowering the cost of production of grain and of field crops in general. Other conditions being equal, an increase of grain yield of one centner per ha. results in lowering the cost by four to six rubles. But grain production will become a reliable source of large income and of lowering the cost of production only if the state farms obtain high yields every year. In this respect the Kuban state farm in Krasnodar Territory may serve as a good example. There under all conditions the yield of winter wheat does not fall below 20 centners per ha.

* Data for 1950 include the state farms later grouped in the system of the USSR Ministry of State Farms. For the state farms which were part of the system in 1950 the costs per centner of products were: grain 48.94 rubles, milk 123.69 rubles, beef 604.21 rubles, pork 1,403.96 rubles, and wool 1,667.51 rubles.

	winter grain		spring grain	
	rubles	%	rubles	%
wages	8.09	23.3	7.58	23.8
fuel and lubricants	2.29	6.6	2.36	7.4
seeds	6.60	19.0	8.36	26.2
fertilizers	1.67	4.8	0.18	0.6
amortization of tractors and agricultural machines	2.36	6.8	2,10	6.6
current repairs of tractors and agricultural machines	3.30	9.5	2.74	8.6
other direct expenditures	4.83	13.9	3.44	10.8
overhead expenditures	5.59	16.1	5.10	16.0
expenditure of labor in hours and minutes	2 hr. 52 min.		1 hr. 31 m.	
total	34.73	100.0	31.86	100.0

An important source for lowering the cost of grain on the state farms is reducing the expenditure of labor per unit of product on the grain farms. In 1956 gross production of grain on the state farms per worker was 726 poods. This labor productivity on the grain farms was at least six to seven times higher than on the peasant farms of Tsarist Russia. The state farms of our country in respect to the level of labor productivity on grain farms approached very nearly the level of the United States. In 1950-1953 in the United States expenditure of labor in the production of one centner of grain amounted on the average to 1.24 man-hours, and the average yield of grain was 13.4 centners per ha. (excluding corn)*, while on our state farms in 1956 two man-hours were spent in production of one centner and the average yield was ten centners per ha.

The availability of large reserves for the further growth of labor productivity on the state farms may be seen from the data of the state farms by Union republics for 1956, when the expenditure of labor for the production of one centner of grain varied from 1.6 man-hours (Kazakhstan) to 2.8 man-hours (Kirgiz Republic). On the best farms the actual expenditure of labor for the production of one centner of grain amounted to less than one man-hour. For example, on the Giant state farm in Rostov Province the actual yield of grain for its whole area reached 22.1 centners per ha. in 1956 and expenditure of labor only 43 minutes. A substantial lowering of labor expenditure per centner of output was obtained on many state grain farms formed on the virgin lands. For example, on the state farms of Kustanai Province in 1956 expenditure of labor needed for production of one centner of grain, with an average yield of 13 centners per ha., amounted to 1.6 man-hours. On the Pavlov state farm in that province the average yield was 20.2 centners per ha., expdnditure of labor per centner was one man-hour and the gross output of grain per worker was 6,000 poods. This shows that by the end of the Sixth Five-Year Plan the state farms have real possibilities not only of attaining the level of labor productivity of United States grain farms, but even exceeding it.

In order to obtain a sharp decrease of labor expenditure per centner of grain it is necessary to achieve a maximum load for

* It may be noted that in calculating the productivity of labor on grain farms in the United States expenditures on post-harvest operations usually are not included (as a rule they are carried out in a centralized way by large grain merchants) while in our state farms these operations make up to 30% of labor expenditures. Moreover, the data for the United States look somewhat more favorable because they are based on sample investigations chiefly of large, superior farms.

ctors, use correct combinations of machines, etc. An espe-
lly important factor in lowering expenditure of labor on
ain farms is mechanization of grain threshing and sorting.
the experience of the Borisovsk state farm, Omsk Province,
l of other farms shows, a proper use of sorting machines and
weyers, in combination with adjustments devised by our in-
vators, would cut the time needed for all post-harvest opera-
ns by more than half. The state farms are now being armed
h grain-cleaning and -loading machines and with grain dryers
high productivity. Thus there is a possibility of organizing
each state farm highly mechanized post-harvest operations
l of substantially reducing the expenditure of labor on these
erations. A substantial economy of means may also be ob-
ned through lowering expenditures for seed, fuel, tractor re-
rs, amortization of the machine and tractor fleet and lower-
other expenditures.

However, this does not mean that any and every saving is
tified. Savings should not be at the expense of the require-
nts of the best agricultural methods. The managers and
cialists of the state farms are right when they consciously
ke additional expenditures on grain production expecting that
y will be repaid in the form of increased yields. Such an ap-
ach should be encouraged, while at the same time a decisive
ggle should be conducted against waste and unwise expendi-
e of means. Organization of tractor work should be care-
y thought out and economically sound, so that the means of
duction and the labor of mechanizers can be used most
ctively throughout the year.

n order to cut down expenditure on seed, including the ex-
nge of unsorted seed for seed of the same strain, each state
m should establish plots for growing its own good seed and
ain high and stable yields on such plots. It should be clear
insufficient attention by many state farms to seed growing
ers our yields and is one of the causes of high expenditure
seed.

n the grain economy as well as in other branches the cost of
duction to a large degree depends upon the level of concentra-
of agricultural production. On large grain farms, other
ditions being equal, the technical means are better used, the
rhead is lower, and amortization per unit of output is lower.
analysis of the work of the state farms organized on the
in and long-fallow lands of Kazakhstan shows that on the
e farms where the area under grain is 25,000 to 30,000 ha.
cost of one centner of grain is almost eight rubles lower
on the state farms with a sown area below 15,000 ha. In the
e farms with a sown area of 20,000 to 25,000 ha. the cost is
e rubles lower than on those with a sown area under
00 ha.

hus the basic source for lowering production expenditures in
grain economy lies in yield increase; reduction of labor ex-
itures per unit of product; complex mechanization of labor-
suming processes, especially in post-harvest operations;
eful expenditure of means on tractor work, lowering overhead
enses and all other types of expenses. These sources of re-
ng costs may be tapped with equal success in other branches
gricultural production. At the same time it is necessary to
ch for additional reserves in each branch of production.

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he state farms will play a larger and larger part in supply-
he country with livestock products. In view of this the state
n workers should pay most serious attention to the problem
harply reducing the cost of meat, milk and other livestock
ucts.

hanges in the cost per centner of these products on the farms
e former USSR Ministry of State Farms for 1953-1956 were
llows (in rubles):

	1953	1954	1955	1956
lk	117.56	117.09	117.46	127.60
rk (live weight)	999.43	998.32	976.97	985.84
ef	664.01	655.82	659.86	700.76
ol	1637.94	1798.84	1575.81	1846.14
gs (per ten)	6.53	6.45	5.83	5.62

This table shows that in the last four years the cost of basic livestock products remained on the same level or even increased. Though the cost increase in 1956 was chiefly the result of increased feed cost—itself the result of drought in many regions in 1955—nevertheless it is clear that the situation in respect to the cost of livestock products, especially of beef, is unsatisfactory. The production expenses for livestock products on state farms of the central and northwestern regions of the RSFSR, Belorussia, the Baltic republics, Georgia and Uzbekistan are impermissibly high. This branch of agriculture has tremendous untapped reserves for lowering expenditures per unit of output. It is enough to mention that production of one centner of beef or milk on the leading state farms is 20 to 30% lower than the averages for the state farms of the regions and republics. This means that lowering the cost of beef and milk on all state farms to the level obtained by the leading ones would sharply increase the profitability of livestock production. However, even the leading state farms have far from exhausted the possibilities for lowering the cost of these products. This may be seen from the data of the actual expenditures for the production of one centner of pork in 1956 on the state farms of Stalingrad Province and on the Beshevsk state farm of the same province (in rubles):

	actual expenditures		should be by standard
	av. for region	in Beshevsk state farm	
wages	147.50	113.84	95.00
cost of feed	406.20	276.80	140.00
other direct expenditures	87.99	101.75	50.00
general production expenditures	97.84	72.29	59.00
general state farm expenditures	35.71	23.94	23.00
total	775.24	588.62	367.00
man-hours per centner increase in wt. (entire herd)	53	32	30
feed units per centner wt. increase	11.0	7.0	6.5
cost of feed unit in rubles	37.00	39.00	20.00
wt. increase per day (grams)	243	251	360

This table shows what level of expenditures the state farms should have if they were managed properly. For example, the average cost of one centner of pork for the whole region was 775 rubles. On the Beshevsk state farm it was 589 rubles, while according to existing standards it should be 367 rubles, or less than 50% of the actual cost in the state farms of that province. Expenditure of labor per centner of weight increase should be 30 man-hours instead of 53 man-hours on the state farms of that province. Expenditure of feed for production of one centner of pork should be not more than 6.5 centners of feed units and the total cost 140 rubles. Actually 11 centners of feed units, which cost 406 rubles, or almost three times as much, were expended.

Every branch of livestock breeding has its own reserves for a sharp reduction of production costs through better organization and increasing livestock productivity. However, for each branch of livestock breeding of decisive influence is strengthening its feed base and lowering the cost of feed production. The cost of feed as part of the total cost of milk on the state farms of the USSR Ministry of Agriculture amounted to 48.5% in gaining a 58.7% weight increase for cattle and hogs. In view of this the struggle for lowering feed cost is one of the basic conditions for lowering the cost of livestock products.

Unfortunately, on many state farms the feed is expensive. On the leading farms production of a feed unit of grain and meadow

hay, of roughage and of hay from sown grasses is two to three times cheaper than in the state farm system as a whole, and of silo corn and of potatoes, six to eight times cheaper.*

Experience shows that for the majority of our farms the most profitable crop is corn. Silo corn costs the leading farms only 0.09 to 0.10 rubles per feed unit and corn at milk-wax maturity 0.11 to 0.12 rubles. Increasing the use of corn for feed will make it possible to cut down the expense of livestock products. The practice of recent years shows that it is possible to grow corn on such large areas that the state farm can get a good crop and fully cover its livestock's requirements in this valuable feed.

Potatoes are a very valuable feed crop for the state farms of the non-black earth belt. Potato-growing on many state farms is too expensive. Yet at the same time many leading state farms produce them at a cost of 0.20 to 0.30 rubles per feed unit. Increase in potato yields, greater mechanization of work and introduction of the practice of allowing the pigs to feed on potatoes in the field will considerably increase the advantages of producing this crop. On the state farms of the Baltic republics and the non-black earth belt it would be very effective to establish man-made pastures which, with proper care, could yield more than 3,000 feed units per ha.

In carrying out measures for strengthening the feed base for livestock breeding serious attention should be given to the production of albumin feeds which are required in certain quantities in each ration. For this purpose the area under beans should be increased.

The majority of state farms in the eastern and southeastern regions of the country specialize in meat and meat-and-wool production. For these regions an important source of lowering the cost of such products is an increase in productivity and fuller use of natural meadows and pastures. On the experimental plot at Brody state farm, Chkalov Province, pastures improved by the addition of awnless koster and zhitnyak gave an average hay yield of 30 centners per ha. in the last three years. Even on somewhat saline soils on slopes the average pasture yield improved with the addition of the above-mentioned grasses, in terms of hay, by ten centners per ha., while unimproved pastures yielded only up to three to four centners per ha. Though the results of these experiments have been known for quite a time, unfortunately they have not been applied widely in practice on the state farms of those regions. They should become general practice on many state farms.

Practice shows that at the present level of mechanization and agricultural technology state farms in all zones can harvest the necessary amount of feed from one ha. at a cost per feed unit no higher than 0.12 to 0.30 rubles (depending upon the zone). The main conditions for reducing feed production expenses and lowering the cost per feed unit on each state farm are selecting the appropriate feed crops and securing high yields at a minimal expenditure of labor and means per unit of product. At the same time the farms should not neglect proper organization of pastures, remembering the necessity of their systematic improvement and rational utilization.

There remains much to be done in the field of lowering the cost of milk. In 1956 production of one centner of milk on the state farms of Kirgizia, Azerbaidzhan and Estonia cost from 119 to 122 rubles; on the state farms of Belorussia and the RSFSR from 131 to 134 rubles; on the state farms of Uzbekistan and Kazakhstan over 150 rubles. In other words, on a substantial number of farms the cost of producing milk is higher than receipts from its sale. Yet on each farm there are extensive sources for lowering the cost of milk, as may be seen from the following data on expenditures per centner of milk in Omsk Province in 1956 (in rubles):

	actual expenses		expenses according to established standards
	average for the region	Central Lyubimsk State Farm	
wages	31.88	27.84	24.17
cost of feed	56.40	41.71	17.00
other direct expenditures	4.33	4.17	3.00
general production expenditures	17.46	13.09	11.12
general state farm expenditures	7.14	5.04	4.59
total	117.21	91.85	59.88

The cost of maintenance of cows and consequently the cost of producing one centner of milk to an important degree depends upon the kind and quantities of feed given the cows, because it makes up 48.5% of the cost of milk. In order to obtain one kg. of milk according to standards it is not necessary to spend over one feed unit (of all kinds of feeds) and in the case of concentrates 250 grams. Yet on many state farms the expenditure of feeds for milk production is substantially higher and results in high costs.

Some state farm managers permit an overexpenditure of feed units because the rations have few or no feeds rich in albumin. In preparing plans for production of feed it is necessary to make calculations not only by feed units but also by content of albumin and try to achieve the most rational composition of rations, taking into consideration their nutritive value, albumin content, and costs.

On many state farms the cost of milk is high because of the high percentage of dry cows. On the state farms of Rostov Province 19% of the cows were dry, and this increased the cost of one centner of milk by 14 rubles. The productive herd of cows on Kazakhstan state farms is especially poorly used. Improvement in this situation is an important condition for the rapid reproduction of the herd and for increasing the cows' milk yield.

On the state farms which deliver whole milk and which have sufficient reserves of winter feeds and warm shelters, expenditures of milk production are lowered with the introduction of year-round calving. In this case labor power as well as transport means are used during the year more evenly and the need in milking inventory is reduced, as well as the need for calf sheds. In milk-cow breeding in the steppe regions, with their rich summer pastures, spring calving is preferable, beginning with the start of the pasturing period. For example, on the state farms of Novosibirsk Province, with maximal utilization of natural pastures, at spring calving the milk yield is 18 to 20% higher (in comparison with autumn calving) and the cost is 25 to 30% lower.

The cost of milk is increased also by high overhead expenditures. In 1955 the general production expenditures per centner of milk amounted to 17.06 rubles, or to 14.5% of the total cost; general state farm expenditures amounted to 8.55 rubles, or 7.3%. Thus all overhead expenditures per centner of milk amounted to 25.61 rubles, or 21.7% of the cost. The experience of the state farms shows that they may considerably reduce overhead expenditures for milk. For example, wages of cattle-breeding specialists per centner of milk vary from three rubles (the state farms of the Lithuanian Republic) to six rubles (the state farms of Kazakhstan) and on the state farms of Nikolayev Province they make up less than three rubles.

Part of the cost of milk consists of expenditures for amortization of the means of production. Expenditures vary from one state farm to another. In Stalingrad Province in 1956 they amounted to six rubles per centner, in Nikolayev Province only to three rubles.

*It should be mentioned that the cost of a feed unit consumed in livestock breeding is considerably higher than its cost in general agricultural production. This may be explained mainly by the fact that the cheapest grain is produced in the steppe regions where there are fewer animals per unit area and only small quantities of grain are used for the livestock; the main part of it is delivered to the state. But in the intensive dairy farming regions and regions in which hogs are fattened for market the cost of grain feed is considerably higher than the average for the country. In 1956 in the state farm system as a whole a combined feed unit cost 0.31 rubles; yet feed for basic dairy cattle was 0.51 rubles, for young stock 0.63 rubles, and for weanling pigs 0.59 rubles. On the RSFSR state farms for the same period the corresponding figures were 0.35, 0.55, 0.67 and 0.62 rubles.

An analysis of the data for leading state farms shows that the rt of the general production expenditures in the cost of milk ıy be brought down to 10% and of the general state farm expend- ires to 5%.

There are great possibilities for lowering the cost of beef oduction. For example, the cost of beef in the leading state rms is much lower than the averages for regions and republics d in some cases, even in the same region, the leading farm's cost only half the cost of those state farms which are lagging be- ıd. For example, in the Kuibyshev region the Kuibyshev state rm's cost for one centner of beef in 1956 amounted to 1,128 bles, while Privolzhye state farm's was 555 rubles. It is aracteristic that in the first state farm the expenditures on d per centner of weight increase for young stock amounted to 3 rubles, in the second — to 336 rubles. An analysis of the cost beef on the state farms shows that it is directly dependent on the organization of pasturing and feeding for gaining weight, on the system of animal feeding, the availability of feed and nutritional value.

In cases when the farms have the necessary amounts of good d during the winter period and good pastures in the summer, l when the cows are properly cared for and pasturing or feed- for gaining weight are organized well, there will be a mini- m of 700 to 800 grams of daily weight increase per head of tle, and in the best brigades, even more than one kg. But in umber of state farms the young stock is fed under normal ıditions only during the milk feeding period and after that it ed poor rations. Thus good results achieved during the pre- ing period are later lost. In winter time, because of unsatis- tory feeding, the young stock in many cases even loses weight, this increases the cost of beef.

Jnder normal feeding and upkeep conditions of the young stock s possible to deliver to the state young stock one-and-a-half rs old with weight on the hoof not less than 320 kg. per capita that the cost per centner weight increase is lowered by 200 to rubles. Yet actually the state farms of the Ukrainian Repub- delivered (for veal) about 47,000 calves less than one year with an average weight of 227 lb. The state farms of the FSR delivered to the state 157,000 calves with an average ght of 107 kg. and 356,000 with an average weight of 228 kg. cause of the delivery of underweight young stock the state ms of the Ukraine lost twenty million rubles and those of the FSR — more than one hundred million rubles.

he delivery of underweight young stock at early age and of r quality is economically unjustified. The interests of the e demand that the young stock at the state farms be deliv- d when it is one-and-a-half to two years old and in the state ms of the steppe zone — two to two-and-a-half years old. The e farms supplying large cities and industrial centers with le milk, as well as the state farms of the Baltic Republics, ch have to deliver the young stock when it is immature, uld deliver it only when it is of proper weight and the beef irm and of fine texture.

Many new lands have been attached to the state farms and this stantially expanded their feeding base. In the state farms ch have large natural pastures it is advisable to organize cial farms for intensive weight gaining by the young stock the average daily weight increase of not less than 800 to grams per head. This young stock should reach 350 to 370 per head by the end of their first year. The monetary re- ts from delivery will be larger than expenditures for upkeep. culations show that bringing the weight of the young stock, six ths old, to 200 kg. requires 6.5 centners of feed units for ining one centner of weight increase and if concentrates are ted (including whole milk and skimmed milk) — three centners.

the steppe regions of Kazakhstan and the Russian Republic y state farms are oriented toward beef production. In 1956 azakhstan there were 164 such state farms and in the RSFSR Soon the number of such farms will greatly increase. They so to say, factories of good quality beef. They will have to e the best beef-producing breeds, for example, Kazakhstan, te Head, Astrakhan and others, as well as to produce cheap t through improving the meat qualities of local breeds. The itability of such farms will depend upon lowering the ntenance cost of productive cow herds, upon getting calves n the cows every year and upon growing early maturing young stock. In Pyatimarsk state farm, Western Kazakhstan (which is specializing in beef production) the percentage of cows with surviving calves reaches 90 to 92% and one centner of weight increase cost only 297 rubles in 1957.

An indispensable condition of cheap beef production is the prevention of cattle epidemics. In 1956 in a number of state farms there was an epidemic among the calves and this lowered all indices of livestock breeding and increased the cost of production. For example, in the state farms of Saratov Province as a result of cattle epidemic the cost of one centner of beef increased on the average by 100 rubles.

Lowering the cost of beef to a great extent depends upon the number of livestock on the farm. On the state farms with a large number of livestock, as a rule, there are better possibilities for fuller utilization of the labor force for mechanization of the work which needs much labor, for replacements, for the formation of herds to be fattened for the market, and herds of the same age and sex. According to the data of Chkalov Research Institute for Dairy-Beef Livestock Breeding only the proper formation of herds of the same age and sex guarantees a weight increase of 9 to 15% and a substantial reduction of beef cost.

One of the causes of high beef cost is belated mating of the young stock. Frequently this mating is postponed till the heifer is three years old. But the annual maintenance of each heifer costs about 2,000 rubles. These expenditures increase the cost of cows and the cost of beef. It is also necessary to lower the cost of beef through wider application of artificial insemination of cows and reduction of the number of breed bulls on the farms because their upkeep costs on the average up to 3,000 rubles a year.

Also of great influence on the level of beef cost are overhead expenditures. Their level on many farms is too high and fluctuates from 12.1% on the farms of the Lithuanian Republic to 17% on the state farms of Kazakhstan.

As the experience of the leading farms shows, carrying out the measures necessary for strengthening the feeding base, improvement in bringing up the young stock, liquidation of dryness of cows, cutting down the overhead expenditures, etc., would make it possible to reduce the cost of beef at least by 30 to 50% and bring it to about 300 rubles per centner in the beef farms, to 350 rubles in the state farms of the steppe regions of the south, middle Volga and Siberia, from 400 to 450 rubles in the state farms of the central regions and from 450 to 500 rubles on the state farms of the Baltic republics, Belorussia and the non-black earth zone regions of the RSFSR.

Of special importance in increasing production of meat is pig breeding, because pigs are fast maturing animals. That is why lowering the cost of pork is of such importance for our economy. During the years of the Fifth Five-Year Plan the cost of pork on the farms of the former USSR Ministry of State Farms was reduced by 35%. However, in the last three or fours years on the state farms of most republics it has remained on the same level or has even become somewhat higher. The only exception is the Ukrainian Republic.

Almost 60% of expenditures per centner weight increase of hogs is made of feeds which means that also in this branch, without cutting down the cost of feed, we cannot obtain a sizable reduction of pork cost. Shortage of feed grown at the farm frequently results in feeding difficulties, overexpenditure of feed per centner of weight increase and small increase in weight.

With the proper organization of hog feeding for market usually one centner of weight increase (when feeding is made for bacon) requires no more than five to six centners of feed units of all kinds (including four centners of concentrates), while fattening for lard requires from seven to eight centners of feed units, including up to five centners of concentrates. But actually in 1956 one centner of weight increase for the group of hogs fed for market and for weanling pigs, in all state farms of the Russian Federation, required 8.6 feed units, in Kazakhstan — eight and in the Ukraine — 9.5 feed units.

In many state farms insufficient attention is paid to the question of feeding rations of full value, especially in respect to albumin. This results in an unproductive expenditure of feed. Shortage of albumin in feed slows down development and even

results in a standstill of the animal's growth. For hogs fed for market one feed unit must contain from 100 to 125 grams of digestible albumin. On the pedigree hog farms such as Voroshilov state farm, Kirov Province, Achkasovo and Konstantinovo state farms, Moscow Province, in 1956 the rations of hogs fed for market contained about 100 grams of albumin for each feed unit. As a result, the expenditure of feed per centner of weight increase amounted on the average to 5.5 - 5.8 centners of feed unit.

Of great importance in increasing the cost of pork is delivery of live hogs of low weight. For example, on the state farms of the Ukrainian Republic in cases when the average live weight of hogs was 50 kg., one centner of pork cost 795 rubles, while in cases when the live weight was 100 kg., the cost was 695 rubles. The corresponding figures for the RSFSR state farms were 1,037 and 917 rubles. The state farms of the RSFSR delivered 310,000 weanling pigs with an average weight of 13 kg.; the state farms of the Ukraine — 54,000 with an average weight of 12 kg.; Lithuania — 18,000 with an average weight of 10 kg. This resulted in a reduction of the herd size and a sharp lowering of income from pig breeding. The task before the state farms now is to deliver, as a rule, pork from hogs of full weight. This will make possible a substantial reduction of the cost of pork.

An important source for lowering the cost of pork is better utilization of the sow herd. In pig breeding the cost of annual upkeep of the sow herd is debited to the account of young pigs. The larger the number of such pigs, the lower their cost. The state farm Opyt, Voronezh region, in 1956 obtained on the average 1.9 litters for each basic sow with a total of 19 suckling pigs. The cost of weaning one suckling pig amounted to 125 rubles, while the cost of one centner of pork — 747 rubles. In the same region in the state farm Trud, where pig breeding is organized poorly, on the average only 1.3 litter were obtained per basic sow with a total of eleven suckling pigs. The cost of weaning one suckling pig amounted to 216 rubles and the cost of one centner of pork 1,082 rubles, or 335 rubles more than on the state farm Opyt.

In order to increase sharply the production of pork and to cut down its cost we should widely use young sows for producing one litter before feeding them for the market. This measure is of high economic effectiveness because it is not necessary to build expensive piggeries for such sows, the litter is brought forth in the most convenient spring-summer period in light sheds of the camp type and the litter is successfully brought up on cheap, rich green feed. The data of Klenovo-Chegodayevo state farm, Moscow Province (one of the first to start these operations), show that the cost of two-month-old weanling pigs obtained from these young sows under summer camp conditions and brought up on cheap green and succulent feeds is 30% lower than the cost of such pigs obtained from the basic sow in winter. This state farm received 1.5 million rubles of profit from pig breeding in 1956.

Thus, for lowering the cost of pork it is necessary to use the sow herd rationally, to obtain from the basic sows, as a rule, two litters a year with 18-20 suckling pigs, and to obtain a litter from each young sow capable of reproduction before starting to feed her for market.

In connection with this the policy may be mentioned of spacing the litters, one coming in winter, from December to February and the second from May to August (depending upon the zone). This spacing makes possible delivery of pork to the state spaced more evenly throughout the year. The pigs born in the first month of the year reach a weight of 90-100 kg. (live weight) by the end of the year and are delivered for pork in the same year. The pigs born in the summer season reach delivery conditions and are delivered for pork in the first and second quarters of the following year.

Of great importance for lowering the cost of pork is crossbreeding. Pigs received in this way are more viable, they grow quicker, develop better, fatten quicker, their weight increases are higher and the expenditure of feed per unit of weight increase is smaller compared with pure breeds. In crossbreeding, the litters obtained are bigger and the losses of young are smaller. There are from 10 to 15% more sucklings in such cases per litter and their mortality rate is 7 to 10% lower than for the pure breeds. In Luzinsky state farm, Omsk Province, in the last four years, as a result of the application of crossbreeding, the fertility of sows has increased, the weight of suckling pigs at the time of weaning increased 1.3 kg. and the period of feeding for market was shortened by 20 days. This made it possible to cut down the cost per centner of weight increase by 22%.

Cutting down the expenditure of labor and lowering the cost of production is helped by feeding pigs from automatic troughs. This makes it possible to bring the number of pigs served by one worker from 130 to 150 under ordinary methods of feeding to from 800 to 1,000, and to place in the same piggery area from 1.5 to 2 times as many pigs as under ordinary conditions.

We should especially notice the necessity for considerably lowering the cost of pork in the pig breeding farms around Moscow, Leningrad and other large industrial centers. Production of pork here is expensive and many farms suffer losses. Yet the possibility of obtaining profitably inexpensive pork on such state farms is proved in practice. For example, a large pig breeding state farm, Tenth Anniversary of October, in a suburb of Moscow, every year delivers to the state 35,000 centners of pork of excellent condition. The cost of one centner of weight increase in 1956 amounted to 622 rubles and the farm obtained 5.5 million rubles profit. On the average on that farm eight centners of food wastes and about four centners of concentrates are spent for each centner of weight increase. An especially important role is played in lowering the cost of pork on the state farms which use food wastes, potatoes, and other roughage, by feeding pigs twice instead of three times a day. For example, in the Podolsky state hog farm, Moscow Province, the hogs are fed twice a day and, in addition, they have the so-called "unloading day" when the animals receive only water and silage. On that state farm the number of workers in the feed kitchen was reduced by half, the number of hog tenders was reduced from 45 to 25, the number of auxiliary workers from 19 to 13 and instead of four brigades there are now only two. The expenditure of labor per centner of weight increase was cut down from 33 to 20 labor hours. The workers of the state hog breeding farms of Moscow, Leningrad and other industrial provinces have to apply persistently and systematically the improved methods of hog breeding, more fully use their reserves, first of all through improvement of technology and mechanization of production, and on this basis to struggle for a sharp lowering of the cost of pork, making the work of every farm profitable.

Large sources for lowering production cost are available in sheep breeding. Now a large number of state farms have insignificant sheep herds, while a number of them in general do not have sheepbreeding farms. Analysis of the reports on the state of sheep breeding on the state farms shows that lately the number of sheep has increased only 2.5 to 3% on the average. At the same time the mortality of ewes, lambs, and yearlings reached as high as nine to ten per cent. The ewe herd is utilized poorly, so that for each 100 ewes only from 83 to 88 lambs are brought up.

Sheepbreeding should be organized on the state farms of virgin soil regions and restored in the state farms of the regions where it was done away with, without sufficient reasons. The achievements of the nationally well-known pure-bred state sheep breeding farms Soviet Fleece, Chervlennye Buruny, Rubtsovsky, Bolshevik and others show that sheep breeding, if it is properly organized, can be profitable. Large sheepbreeding farms are especially effective. For example, at the Chapayev state farm, Stalingrad Province, which has about 27,000 sheep, with shear of wool per sheep of 4.7 kg., in 1956 the cost of maintenance of one sheep amounted to 86 rubles (average); the farm delivered to the state 1,082 centners of wool and it cost the farm 1,087 rubles per centner. At Kirov state farm, Orenburg Province, there are 6,300 sheep, the shear of wool per sheep is 2.1 kg., the average cost of sheep maintenance is 169 rubles; the farm delivered to the state 165 centners of wool and its cost was 4,997 rubles per centner.

Lowering the cost of production in sheepbreeding may be obtained through increasing the number of sheep and increasing their productivity and through raising merino sheep more widely. At the same time karakul, double-purpose, and sheepskin sheepbreeding on large state farms should be developed in the proper zones.

The state farms have extensive possibilities for lowering the cost of production in poultry farming. This branch of

riculture may result in high incomes if large farms are or-
nized with a minimum of three to five thousand layers raising
r to six baby chicks per hen; 1.5 thousand ducks, bringing up
least 20 ducklings per duck; 800 turkeys, bringing up at
st ten poults per hen; geese, bringing up at least eight
slings per goose. This may be proved by various data. For
mple, in Krasnodar Territory, on the state farms having more
n 3,000 layers the cost of ten eggs is 4.15 rubles. On the state
ms with less than one thousand layers the cost is 6.37 rubles.
Belorussian state farms which have more than 3,000 layers
cost of ten eggs is 7.68 rubles; on the state farms with less
n 1,000 layers — ten rubles.

The cost of eggs to a large degree depends upon the technology
feeding and upkeep of hens. At the Adler "poultry factory,"
asnodar Territory, during nine months of 1957, other condi-
ns being equal, there were obtained under the free maintenance
thod 137 eggs at a cost of 4.07 rubles for ten eggs; with use
he brooder method — 142 eggs, at a cost of 3.71 rubles; in
e of the volière method with the use of wire mesh floor —
eggs at a cost per ten eggs of 3.39 rubles. The volière
thod greatly increases the productivity of labor. It is enough to
that with the brooder method one worker serves 1,800 hens, with
free method — 2,500, and with the voliere method — 5,000 hens.

The magnitude of the sources for lowering the cost of eggs
y be seen from the following. The cost of ten eggs in 1956 on
state farms of the Krasnodar Territory was 3.85 rubles, on
Maikop state poultry farm — 3.50, and, according to stand-
s of feeding and upkeep, if they were strictly followed, they
uld be not more than 2.85 rubles. On each state farm with
per organization it is possible to obtain from each laying hen
least 110 to 120 eggs and on specialized farms at least 170 to
eggs. With such productivity on large farms production of
s will be cheap and this branch will make a profit.

t should also be mentioned that the state farms do not pay
per attention to raising ducks, geese and turkeys, though the
nand of the population for fowl is increasing. The Bolshevik
e farm, Voronezh Province, in 1956 raised 7,000 ducklings
days and more old at a cost of 4.54 rubles per kg. live
ght. The Pachelma state farm, Penza Province, raised 6,000
klings to the same age at a cost of 4.94 rubles per kg. The
orsk poultry farm, Moscow Province, annually raises more
n 50,000 ducklings at a cost of 5.6 rubles per kg. The state
ms can and should in the near future become large suppliers
nexpensive fowl.

f great importance for increasing yields of a number of
ic cultures and lowering of cost is apiculture. For example,
he Stalin collective farm, Izobilnensky district, Stavropol
ritory, in 1956 the increase of the sun flower harvest because
ollination by bees amounted to 20,000 centners from 3,460
or on the average of six centners per ha. At the same time
culture, if properly organized, is a highly profitable branch
griculture. For example, on the Stepnov state farm,
hkiria, in 1957 from each of 3,620 hives on the average 50
of honey were received. Income from apiculture on that farm
ounted to 1,400,000 rubles. Yet on many farms proper atten-
is not given to this important branch of agriculture. We
uld develop apiculture to the level necessary for the rational
anization of our farms.

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he state farms have all the conditions for the exemplary
anization of production, for the constant growth of labor pro-
tivity.

he basis for further growth of production per worker is the
plex mechanization of production processes. At the same
e we must keep in mind that in agriculture the increase in
ductivity of labor is obtained mainly through the growth of
ds of cultures and increase of productivity of livestock rais-
Other conditions being equal, the cost of production and the
enditure of labor per unit of production will be smaller in
e state farms where the yields of all cultures, production of
k per cow, weight increase in feeding for market and fatten-
are highest. Because of that the workers of the state farms
uld set the task — to perfect the organization of production,
trive to obtain the maximal production per 100 ha. of area.
all branches of agriculture there are great possibilities for
growth of labor productivity. It is necessary to find and utilize these possibilities. For example, in cotton growing the hoeing of cotton plants under ordinary methods of planting requires 35 to 40 labor days per ha. while in the case of the cross cultivation-hill method of planting and cultivation of the area between the rows by tractor cultivator in both directions the expenditure of labor is cut down to the range of 15 to 18 labor days. Considering the total area under cotton on the state farms this would result in an economy of two million labor-days a year. Through the application of complex mechanization the production per worker in hay-making and in silaging may also be considerably increased. At present the state farms waste much labor in preparing feeds — on the average 16 man-hours per ton. In addition up to 8 to 10 man-hours per ton are needed to bring hay to the winter quarters. Application of press baling machines and hay stacking machines will make it possible to reduce the expenditure of labor in preparing one ton of hay to three to four man-hours.

There is much to be done for increasing the labor productivity in livestock breeding. The study of the question concerning sources for lowering the expenditure of labor for the production of livestock products shows that expenditures for the production of one centner of milk in the case of the full mechanization of watering and of milking cows may be lowered (depending upon the amount of milk per cow) to six to nine man-hours. The expenditure of labor to obtain one centner weight increase of livestock on beef farms can be reduced to 36 man-hours and in state farms of dual purpose to forty man-hours; per centner of weight increase of hogs fed for market (for bacon or lard) in case of full mechanization with the introduction of automatic feeders to eight man-hours; in case of partial mechanization to 19 man-hours; without mechanization to thirty man-hours; in case of the so-called semi-lard fattening and complete mechinization of labor with use of automatic feeders to seven man-hours; in case of partial mechanization to 17 man-hours and without mechanization to 27 man-hours. But at present on the state farms on the average the production of one centner of milk requires 14 man-hours and production of one centner of weight increase of hogs — 66 man-hours. In Latvia in 1956 production of one centner of milk required 16 man-hours, of one centner of hog weight increase — 69.7 man-hours; in Kazakhstan production of one centner of milk required about 20 man-hours.

Nevertheless many state farms succeeded in substantially lowering the expenditure of labor. The October Revolution stat farm, Stalino Province, which has more than 1,000 cows, obtained from each cow in 1956 on the average 4,156 kg. of milk; the expenditures of labor per centner of milk amounted to 9.6 man-hours and the cost to 88 rubles. The specialized subfarms of that state farm have overhead conveyers, automatic water supply for cattle, aggregates for feed production, mechanical milking and movable milking platforms.

During the Sixth Five-Year Plan we have to increase greatly the level of mechanization of work in livestock breeding demanding much labor. Special attention should be paid to the application of automatic fresh water supply, mechanical milking, movable milking platforms and other measures which increase the number of cattle served by one worker and thus lower the expenditure per unit of product. For example, application of mechanical milking makes it possible to increase the number of cows served by one milking worker 1.5 times. Of greatest importance is wide application of the so-called electroherding. As experience shows, the use of an electrified fence makes it possible to organize the work in such a way that three workers can serve two herds with 100 cows in each, while under ordinary conditions three workers serve only one herd. This measure will also have a substantial effect in the hog breeding.

Great possibilities for increasing labor productivity and freeing a large number of workers now occupied in livestock breeding are connected with the wider application of milking cows twice a day. It is of interest that in England milking twice a day is applied everywhere, independently of the amount of milk produced by the cow.

Up to recent times farms measured the milk produced by each cow every day though this was not dictated by economic considerations. This took up 15% of the milkmaids' time and up to half the time of the brigadier. Now in many state farms measuring the

milk produced by each cow is made once in ten days at the so-called control milking.

Lowering labor expenditure per unit of production on the state farms to a considerable degree depends upon the organization of labor and established standards. For a number of years obsolete standards of work were applied at the livestock breeding farms of the state farms and these standards did not correspond to the new conditions of production. In 1956 the standards of work were increased on the average by 25 to 30% and the results of production show that this was fully justified. However, on the state farms the necessity of improving the standards of work is still not fully understood. Usually they apply experimental-statistical standards which do not take into consideration the experience of the best workers. Exact timing of various labor operations is practically not applied. It is necessary to carry out the important work of improving the situation in respect to standards of labor.

Of great importance for increasing the productivity of labor on the state farms is increased material incentives for workers so that they can be interested in the results of their work. We should improve the system of payments to workers and specialists on the state farms in such a way that their interest in increasing production will be heightened.

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The sources for lowering monetary and labor expenditures on the state farms are numerous. An important principle of socialist work is economy of means and labor at every stage of production. The duty of the state farm workers is to show initiative and persistence in the economic organization of management of the state farms, of their subfarms and divisions, not permitting an overexpenditure of means for the upkeep of the management apparatus, passenger transport, detached service, current repairs of basic means and purchase of small implements.

The basic condition for lowering the cost of production of the state farms is an effective use of capital investments and lowering the cost of construction. Capital investments should be distributed first of all with a view to which branches of agriculture may yield the products most needed by the state and which are least expensive. They should be applied first of all to the construction of production buildings and to the completion of the complex mechanization of processes requiring much labor.

Great attention in that connection should be paid to improving the level of designing work.

Lately the basic standard designs of livestock buildings were re-examined with the purpose of increasing their capacity. The approved changes make it possible to build inexpensive sheds of good quality; for example, they make it possible to increase the number of hogs in such sheds from 400 to 600 and even up to 800. The cost of the building per animal will be reduced from 524 to 349 rubles. In the hog sheds for sows the cost per animal will be reduced by 700 to 800 rubles. Standard designs should be continuously improved. For example, it is necessary to foresee the use of lofts in cow sheds for storing hay or keeping poultry.

Serious attention should be given to the establishment of specialized state farms, the distribution of branches of production by geographic zones. Of course, there is no question of a radical re-examination of specialization as it grew up among the state farms, though in a number of cases it does not correspond to the natural-economic conditions of the farms. Emergence of new industrial centers requires the creation around them of large state farms producing milk and vegetables. For the state farms on virgin soils it is necessary to examine properly the local conditions before selectiong branches of livestock breeding. Because of that the question requires deeper study in order to determine the main production specialization of each state farm in combination with auxiliary branches which would make possible obtaining maximum production per 100 ha. with minimum expenditures of means and labor.

The experience of state farm work shows that enormous possibilities exist for lowering production costs. These possibilities are not sufficiently utilized mainly because the management and specialists of many state farms do not study deeply the economics of production, do not struggle systematically with careless attitudes toward means and labor. The necessity to increase state farm incomes obliges the workers of such farms to master the economics of their production. For good farm management it is necessary systematically to analyze indices of production and productivity of labor.

The work of improving economic indices of the state farms can have good results only if all specialists and the active section of the personnel participate and if this work is carried out in close cooperation with Party, labor and Komsomol organizations.

An important means for increasing the level of state farm economic work is an economic approach to the processes inside the farm itself. In order to strengthen this economic approach on the subfarms and divisions of the farm it is necessary to give them not only monthly operative targets of production, but also expenditure limits of such basic elements as wages, expenditure of feed, fuel, etc.

It is also advisable in each region and in each republic, to locate the state farms which manage their farms most rationally and obtain their product with minimum expenditures of labor and means and to turn such farms into model enterprises where others can study the best experience in the economic organization of agricultural production. It is also necessary to make the indices of production cost and of labor productivity the most important ones in judging the results and in deciding the question of who was victorious in the socialist competition of the state farms.

In the agriculture of our country the tremendous job of discovering new resources for increasing the production of all kinds of agricultural products is now going on. The interests of communist construction and the necessity to increase the welfare of the working people of our country require from state farm workers the mobilization of all reserves, a sharp increase in the production of grain, milk and other products with the minimum expenditure of labor and means.

Erlikh

conomic Problems of Developing a stem of Machines for Cotton Production

he creation of a system of machines for the complex mechzation of agriculture on the basis of advanced technique, takinto consideration natural and economic conditions in differzones of the country, is of great importance for a sharp inase in agricultural production. Middle Asia, in particular ekistan, is the main cotton growing area of the USSR. In the d of agriculture, this region is characterized by the large part ved by cotton production which is the most important, decisive ure developing under conditions of irrigated agriculture. Cotton ng with alfalfa which is part of the cotton-grass rotation crop tem) occupies 78% of the irrigated area of Uzbekistan collective ms, brings about 80% of the monetary income of the collective ms, and takes 73% of the labor and 65% of the tractor work carl out by the MTS for the collective farms, including 85.5% of the k carried out by cultivator tractors (according to 1956 data).

he system of machines on the farms of each zone should be eloped as a unity, embracing in a planned way the basic nches of agriculture. At present more than 50,000 tractors erms of 15 HP tractors) are at work on the fields of the e and collective farms of Uzbekistan. The agriculture of Republic has a large fleet of various agricultural machines, vators for cleaning the irrigation network and for reclama- work, etc. However, in spite of successes, the existing sys- of machines in Uzbekistan agriculture — including cotton duction — is not sufficient yet for the complex mechaniza- of agricultural production.

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system of machines in cotton production should be developed r conditions of strict proportionality of all its elements. following requirements should be satisfied: 1) availability achines for carrying out the whole agro-technical complex asic and subsidiary agricultural work in a normal agro- nical period; 2) availability of tractors and other sources wer for the working machines; 3) proper combination of tors and other aggregates at different stages and process- f agricultural production; 4) even distribution of power labor force through the whole period of production.

he creation of the necessary proportions in the system of hines in cotton production presents considerable difficulties. must consider the fact that cotton cultivation and harvesting and about 60 different basic and subsidiary processes, in- ing careful cultivation of the soil before planting, cultiva- of the soil between rows and care of the plants, a complex em of irrigation, special methods of harvesting, etc. Paral- o the application of ordinary tractors for cotton cultivation harvesting tractor cultivators should be used which can ly pass between rows without harming the plants.

cotton production at present there is a sharply uneven hanization of particular kinds of work. For some production esses mechanization in the main has been completed (plow- harrowing, cultivation before planting, planting, etc.); for e — it embraces three-quarters and even more of the whole me of work (control of agricultural pests, mellowing the removing weeds between rows, summer feeding of com- cial fertilizers, cutting irrigation furrows, removing stalks, ning unopened bolls of cotton and others). At the same time mber of processes demanding much labor (thinning of plants, ent planning of ground, mellowing soil and removing weeds nd the hills, feeding local fertilizers, harvesting cotton, ributing water and watering, cleaning the shallow irrigation ork, all types of loading and unloading work, etc.) are car- out almost exclusively by hand.

e made an attempt to determine the general level of mechanization of cotton production as a whole and of its basic stages. For this purpose the whole volume of agricultural work in 1956 was calculated in terms of plowed land and the data thus obtained compared with the work actually done by machines in terms of hectares of plowed land. These calculations show that the percentage of mechanization of cotton culture (for the whole sown area under cotton in the collective farms of Uzbekistan) was 49, amounting to 88.7 for soil cultivation, 48.5 for planting, care of soil and plants, feeding fertilizers and irrigation; and 18.3 for work during the harvesting period. In spite of their theoretical character these data show that the basic evidence of a developed system of machines — presence of an aggregate of "partial" working machines for consecutive coverage of all agricultural processes — is still absent in cotton production. In the MTS and state farms up to now there were no machines of different types (and if there were, there were too few of them) for the above enumerated processes done by hand. At the same time a large part of the machines in the MTS and state farms as well as of the tractor cultivators is not up to the standard of the new agrotechnique especially in connection with transition to the cross-cultivated hill method of cotton planting and cultivation. One of the causes of an insufficient level of mechanization in cotton production is also the unsatisfactory utilization of available machines (for example, the percentage of mechanization of harvesting is still very low, yet the available fleet of harvesting machines makes possible mechanized harvesting of 30 to 35% of the area under cotton). Thus, great and complex problems confront the workers of agricultural machine building and of agriculture. In the near future they must create a complex of machines for cotton production, modernize available machine designs and improve the utilization of the existing fleet of machines.

Unfortunately up to now a broad perspective plan for the complex mechanization of cotton production has not been worked out. There was no continuity in designing machines for this purpose; there was no order and definite time limit for their manufacturing by agricultural machine building plants. Many organizational questions of design and machine construction have not yet been decided. The only special construction bureau in the USSR designing machines for the mechanization of cotton production is occupied with a comparatively small range of machines which is narrower by far than the complex of machines necessary for the application of an improved system of machines in cotton production.

Creating and mastering the necessary group of machines must be closely tied up with effective use of the power base in the cotton producing regions and securing the proper proportions in power consumption in terms of sources and agricultural processes.

In past years the volume of tractor work in cotton production has been continuously increasing. In 1933 the total volume of such work per ha. of sown area of cotton amounted only to 0.79 ha. of plowed land. In 1940 it increased to 6.6 ha., in 1956 to 9.3 ha. At the same time the part of the work done by cultivator tractors increased from 20% of total work done by tractors in 1933 to 31.8% in 1940 and to 63.8% in 1956. Our calculations show that the total volume of tractor work should be brought to 18.6 ha. of plowed land per ha. of sown area under cotton and the part of cultivator tractors in this work should be brought to 82%. This demands designing the most effective, highly productive cultivator tractors adjusted for work under specific conditions of cotton production. Unfortunately this problem has not yet been solved and though the technically obsolete, not very effective "Universal" cultivator tractors of small power capacity began to be supplanted by the new diesel DT-24-3 cultivator tractors, these,

in the opinions of specialists, do not answer the need of cotton production by far and need improvements.

It is necessary to introduce serious structural changes in the distribution of tractor work by stages of production. In 1956 out of the total amount of tractor work the cultivation of soil took 36.1%, while planting, tending the plants, application of fertilizers, and irrigation took 54.5% and harvesting only 9.4%. In order to secure a complex mechanization we need different ratios in this work: the part of tractor work in harvesting period processes should be increased to 38.4%.

Structural changes are also needed in the consumption of power. For the economic analysis of a system of machines it is advisable, in our opinion, to apply — by analogy with industry — a method of recording the consumption of the whole energy in power-hours. We made the corresponding calculations in which the consumption of power for tractor aggregates was calculated according to the physical volume of work needed for each process and the standards of fuel consumption per hour of useful work for various types of tractors and various soils of Uzbekistan as well as tractive resistance of the tractor aggregates. For the trucks of the MTS and collective farms a method of calculation by volume of haulage was applied in ton-km., HP and carrying capacity of the various types of trucks. The power of excavators (used for cleaning irrigation canals) and of the stationary engines was determined on the basis of actual data of the MTS and excavator stations. The power used in terms of draft animals was determined on the basis of the volume of production and transport work carried out by them and recalculated at accepted coefficients, etc. These calculations made it possible to discover some characteristic tendencies in developing an energy base for a system of machines.

In 1956 the total expenditure of power per ha. sown cotton area amounted to 482.8 power-hours of which 433.8 power-hours were supplied by mechanized energy and 49 power-hours by draft animals. The mechanical energy by basic sources was obtained in the following way: energy of the tractors - 246.1 power-hours; energy of the trucks — 87.6 power-hours; of excavators and stationary engines — 100.1 power-hours. A complex mechanization would require total consumption of 1,068 power-hours per ha. of cotton, of which 1,051 power-hours would be supplied by mechanical energy and 17 power-hours by draft animals. Of the total mechanical power 625 power-hours should come from tractors, 216 — from trucks, and 210 — from excavators and stationary engines.

Doubling the volume of work and the total consumption of mechanical energy per ha. of cotton does not necessarily mean doubling the fleet of tractors and other machines. The result may be obtained first of all through mechanization of many processes which now are performed by hand or with the help of draft animals; in other words it may be obtained through expansion of the area where tractors are applied.

One of the important conditions for securing the necessary proportionality of the system of machines is a maximal possible work load for tractors during the production period. However, this condition up to the present time has not been fulfilled. A chart of cultivator tractor utilization by five-day periods prepared by us shows that under complex mechanization applied, for example, on 1,500,000 ha. of sown cotton area with available machines, in the same five-day periods in October we shall need from 65,000 to 70,000 tractors for harvesting while for the rest of the year for other work it would be enough to use 35,000 tractors. This would cause long idleness for a substantial portion of the tractor fleet. This is caused on the one hand by a disparity between the power of the tractors and the designs of existing suspended or attached machines. On the other hand the machines and implements themselves differ in the width of their working grip. For example, the cotton harvesting machine SHM-48 was designed for one-row work, while machines used for the preceding stages of work were designed for four rows. The problem is to bring all the implements of the system of machines to a definite designing unity. This would require the application of cultivator-tractors of increased capacity, perfection of the designing of the machines themselves, lowering their weight, lowering of their metal content, etc.

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An important condition for the effective development of a system of cotton growing machines is its organic connection with the best agrotechnique. During the years of socialist construction agricultural technique in cotton growing has greatly changed. The old methods of growing cotton, methods peculiar to the parcellized farm economy, the economy of the pre-revolutionary period with prominence of hand technique, were discarded. New agricultural methods were applied (deep plowing, cultivation of the soil before planting, use of mineral fertilizers, watering by furrows, chekanka — cutting of the upper part of the stalk for accelerating the maturing of cotton — and many others). However, at the present stage certain contradictions appear between the development of a system of machines and the established methods of cotton growing. These contradictions hinder efforts to increase the level of mechanization in this field, to increase yields and to lower labor expenditures.

One of these contradictions is the existence of a system in which cotton is grown in rows. This excludes the possibility of cultivating cotton between rows in two directions (cross cultivation) and results in a tremendous expenditure of hand labor. This contradiction is overcome at present through a change to cross planting cotton seeds by the hill-drop method ["square hill-drop method"]. In 1956 through application of this method it was possible, at least partially, to carry out mechanization of cotton cultivation across the rows on the sown area of more than 650,000 ha. and to lower the expenditure of labor for cotton growing (without harvesting) on this area by about 35% compared with 1953. On some farms the results achieved were even more favorable. However the number of improved planting machines and cultivators suitable for this method is not yet sufficient. Further application of this method opens the possibility of completely dispensing with hand labor in the process of cultivation between rows in both directions.

Another expression of the contradiction between the system of machines and the established methods of cotton growing is the unsatisfactory state of mechanical harvesting. The majority of the mechanical harvesters stand idle or work only several days a year, while the harvesting of cotton is carried out by hand, and this results in a tremendous expenditure of labor, requires bringing a large number of workers from cities, delays the end of the harvesting period till late winter and makes autumn plowing impossible.

Many business leaders are prone to explain the unsatisfactory state of machine cotton harvesting by the complete unsuitability of the available machine designs. Without question these machines need further improvements. However, the experience of some leading farms demonstrates real possibilities for the effective use of such machines and for attaining a relatively high level of harvest mechanization. For example, on the Kirov collective farm, Tashkent region, beginning with 1953 about half of the collected cotton has been harvested each year by machines. In 1956 Malek state farm harvested 40% of the total area with machines and some sections of that farm succeeded in harvesting 50% of the area with machines.

The fundamental causes of the existing unsatisfactory state of affairs are (1) the methods of cotton cultivation and the organization of harvesting work lag considerably behind the requirements of modern machine technique; (2) there is a shortage of skilled workers and (3) sometimes there is a simple failure to understand the importance of machine harvesting.

The cotton fields in the collective farms and in the majority of the state farms are poorly planned; as a result of this the normal movements and work of machines are made difficult; the fields of cotton are weed-infested and many modern methods of weed control, in particular chemical methods, are not applied. Because of the violation of the requirements of agricultural technique cotton plants fall and in general this makes the work of machines impossible; the requirement of a strictly equal distance between plants is not observed; defoliation is poorly done; etc. The work of selection and plant breeding is also not carried out with an eye to requirements of mechanical harvesting. Up to now the types of cotton with a limited number of branches and with a strong, erect stalk, rapid and simultaneous opening of the bolls, etc., were not applied in production on a sufficient scale necessary for machine harvesting.

The existing planning of harvesting also is not suited to the new technique of mechanical harvesting. While the normal work of machines may begin when from 50 to 60% of the bolls on the

lant open (which usually happens in October), the planning or-
ns set the days of harvesting with a view to delivering no less
an 50% of the whole cotton crop to the state warehouses by
ctober 1st. But this is possible only when harvesting by hand.
s a result the collective and state farms, to fulfil their Sep-
mber plans, collect cotton by hand as soon as the bolls open,
sing outside help for this purpose, while the mechanical har-
esters stand idle.

Thus we should not only improve the agricultural technique
cotton growing and the designing of machines, but also change
e system and methods of planning and organization of harvest-
g.

As is known, one of the progressive movements in the devel-
oment of technology is machine specialization. However, be-
use of the peculiarities of agriculture, specialized machines
ay be used only for short periods. The greater the specializa-
on, the shorter the period of a machine's application.

This contradiction, in our opinion, can be overcome through
iversality of machines which should proceed in three main
rections. First, it is necessary to apply the same machines
the farms for various cultures (for example, using tractor
otton planters for sowing corn). Second, it is necessary to ap-
y the same machines for cultivation between rows of different
idth. Third, it is necessary to arm machines with an assort-
ent of changeable parts for consecutively carrying out various
gricultural processes (for example, in case of cultivators, mel-
wing the soil, removing weeds, cutting irrigation furrows,
c.). Such machines, having all the advantages of specialization,
crease the economic effectiveness of the machine system as
whole by increasing the continuity of machine functioning dur-
g the year and reducing the number of machines needed on the
rm.

Machines of a universal type already are applied on the col-
ctive farms of Uzbekistan. However there are still many un-
lved problems (for example, the designs of the changeable
orking parts of the cultivator for chekanka of cotton are not yet
orked out; mechanical harvesting is not adjusted for harvesting
the cotton bolls which have not yet opened, etc.).

The demands for machine universality are not paid due atten-
on and this results in sizeable losses for the economy. For
ample, for three years the work of designing cotton harvesting
d other machines separately for distances between rows of
cm., 50 cm., and 60 cm. was going on while practice showed
e possibility of designing one type of machine for all such dis-
nces between the rows with corresponding mounting of the
orking parts.

An important step in the development of the technique of cot-
n growing would be the use of combined working machines for
multaneously carrying out several processes: this would
orten the working period and reduce the number of needed
achines. Such machines are already used in cotton growing on
small scale. One machine, for example, combines cutting of
rigation furrows with feeding of fertilizer or planting with
multaneous cutting of the irrigation furrows. However, the
ssibilities of using other combinations are far from exhausted,
pecially in the processes of harvesting. In recent years there
peared an opposite tendency: designing mainly narrowly spe-
alized working machines for consecutively carrying out sepa-
te processes (machines for mechanical stripping of cotton, for
moval of unopened bolls, machines for cleaning bolls, stalk
tters, etc.). Yet, as experimentally designed machines show,
ere is a possibility of combining such operations as harvest-
g unopened bolls, their cleaning, removal of cotton stalks and
king them into heaps. We should think of designing a cotton
rvesting combine for simultaneous harvesting of open and un-
en bolls and for carrying out other operations.

An important direction for further technical development is
der use of mounted (hanging) attachments. This sharply low-
s the amount of metal needed for a machine, increases its
neuverability and improves the quality of work as well as
ening wide possibilities for automation. Especially great pos-
ilities for applying such machines will open with the use of
ew type of improved tractor (so-called autochassis) which
kes possible speedy and easy mounting of almost all machines
cessary for cotton cultivation and harvesting. However, our
signing organizations and machine building plants are imper-
missibly slow in designing and putting into production an auto-
chassis for cotton growing. It is necessary to expedite by every
means the solution of this problem.

Automation of agricultural machinery must at the same time be
directed toward a decisive improvement of agricultural technique,
of the quality of all technological processes, etc. A new type of
planter now in the designing stage may be a good example of ef-
fective automation in agriculture. It drops into each hill a pre-
determined number of seeds. Production of such a planter will
make it possible completely to dispense with hand labor in thin-
ning young plants and will reduce several times the volume of
seeds needed in planting. At the same time we should design and
produce apparatuses and adjustments for automatic control and
regulation of the depth of plowing and the covering of seeds in
planting, securing accuracy of squares and distances between the
rows, amount of water supplied in irrigating cotton fields, chekan-
ka, etc. Of great importance are adjustments for automatically
signalling a breakdown of the normal process of work, for
example, clogging of a planter or a fertilizer machine, of the
cotton-receiving chamber in a harvesting machine, etc. Unfor-
tunately, up to now the research and designing work in this direc-
tion were almost absent.

Merger of collective farms, use of a new system of irrigation,
enlargement of cultivated fields — all this opens wide possibili-
ties for important changes in the technique of cotton growing.
Conditions are being created for increasing the width of the ma-
chine's grasp, changing from existing four-row planters, culti-
vators, and other machines to six-row designs, from one-row
harvesting machines to two-rows, etc. At the same time the in-
crease in machine capacity should go hand in hand with lowering
their weight and increasing their maneuverability.

The development of a system of machines in cotton growing
must be accompanied by a gradual increase in electrification.
However, this question demands special examination and is be-
yond the limits of this article.

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The central problem in the development of a machine system
is the economy of living labor. From the annual reports we can-
not obtain data about the expenditure of labor in man-days and
man-hours. In view of this in analyzing this problem we applied
a method of standardized working time recommended by academi-
cian V. S. Nemchinov, using this method for calculating the labor
expenditures in cotton growing in Uzbekistan in man-days for each
agricultural process separately and then for cotton growing as a
whole. Moreover, for an analysis of the economy of labor achieved
under conditions of mechanization we also calculated the relative
economy of labor expenditures. This was necessary because in-
vestigations of the expenditure of labor on small farms, carried
on in the past, are very incomplete and many processes are not
included in calculations of the expenditure of labor.

In 1956 the expenditure of labor per ha. of sown cotton area
amounted to 161.2 man-days.* With the yield of 22 centners of
raw cotton per ha. 13.6 kg. of cotton per man-day were produced.
If the same volume of work were done with the old hand technique,
the expenditure of labor would amount to 390 man-days per ha.
and production per man-day to 3.1 kg (the average yield in 1913
was 12 centners per ha.). Thus in the past years an economy of
labor obtained per ha. amounting to almost 60% of the level of
1913 and the productivity of labor increased 4.4 times.

The economy of labor expenditure per ha. in terms of various
stages of production in general is proportional to the level of
mechanization; in cultivation of soil the expenditure of labor
diminished 6.1 times (in plowing — 14 times); in planting and
tending plants — three times; in harvesting — 1.5 times. Out of
the total amount of 161.2 man-days per ha. spent in 1956 four
man-days were spent on the cultivation of the soil (plowing, cul-
tivation before planting, current measuring and formation of plots,

* This figure includes direct expenditure of labor by collective farmers occupied in cotton growing brigades, a part of the labor expenditures for the whole collective farm (in irrigation, in tending the draft animals, etc.) in proportion to the earned labor days as well as the labor of the workers of the MTS on the basis of the volume of tractor work done for cotton growing. Moreover, it includes the expenditure of labor by the city population who helped in harvesting cotton (about ten man-days per ha.).

etc.); on planting, fertilizing, irrigation, soil and plant care, 84 man-days (only on mellowing of soil and removal of weeds, 45 man-days); on harvesting cotton, cleaning, drying, transportation, removal of stalks, etc., 65 man-days; on various auxiliary operations, repairs, and other works, eight man-days. Thus the processes of cultivation and the harvesting period combined take 109 man-days and 68% of the total expenditure of labor in cotton growing.

Further development of a system of machines, expansion of its energy basis, design and application of the whole complex of machines for the basic and subsidiary processes of cotton growing in organic, mutual connection with the improvement of agricultural technique will make it possible to obtain an enormous economy of labor and a sharp increase in its productivity. According to calculations made by us, the general expenditure of labor on cotton growing under complex mechanization will amount to 34 man-days per ha. and, as compared with the level of 1956, will be reduced 4.7 times. This economy will be obtained through cutting down the expenditure of labor on those processes which at present are the most labor-consuming and technically backward (in cultivation of land the expenditure of labor will decrease 2.7 times, in planting and plant care, 4.5 times and in harvesting, 6 times). At the same time we expect that in the near future the yield of cotton in the whole area of Uzbekistan will rise to 3 tons of raw cotton per ha. Production of cotton per man-day will rise to 88.2 kg., so that the productivity of labor as compared with 1956 will increase 6.5 times.

This reduction of labor expenditures in cotton growing will be brought about by the replacement of hand labor by machines. As our calculations show, in 1956 out of the total expenditure of labor of 161.2 man-days per ha. machine labor required 11.5 man-days and labor using draft animals as well as hand labor alone — 149.7 days. Under complex mechanization out of 34 man-days per ha. machine labor would require 23.5 man-days and labor using draft animals and hand labor, 10.5 man-days. Thus, as compared with 1956, there will be a new reduction in the expenditure of hand labor and labor using draft animals by 139.2 man-days (from 149.7 to 10.5) and an increase in machine labor by 12.2 man-days (from 11.5 to 23.5 man-days). This means that the development of a system of machines would basically solve the fundamental problem of complex mechanization, namely, the problem of substitution of hand labor with machine labor.

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One of the most important tasks in the development of a system of machines in cotton growing is equalization of the need for labor throughout the year.

In the cotton growing of Uzbekistan up to now there are still sharp differences in the expenditure of labor throughout the year. True, this unequal expenditure of labor is now somewhat smaller than could be expected because in carrying out agricultural work the collective farms are violating prescribed agricultural-technical standards of time (the planting takes from 20 to 25 days instead of eight to ten days, harvesting takes about four months instead of 40 to 50 days, etc.). In order to determine differences in the distribution of labor expenditures and the possibility of correcting them we calculated the necessary size of the labor force in terms of five-days periods assuming agricultural work was carried out in the prescribed time; we also took into consideration the possible number of labor days in each five-day period on the basis of long-term data of Uzbekistan's hydrometeorological service. The calculations were carried out by the same method of standard working time for two variants, but at the level of cotton production expected for 1965: (a) under conditions of the level of mechanization prevailing in 1956 and (b) under conditions of complex mechanization.

Under conditions of the level of mechanization prevailing in 1956 the unequal spread of labor expenditures by five-day periods will become extremely pronounced so that the labor force need during the period of maximal load would amount to 2.5 to 2.75 million man-days in a five-day period, while at present 1,060,000 persons are occupied in cotton growing brigades of the collective farms. This would create such a strain on the labor balance (which to some degree is felt even now) that the development of cotton growing up to the planned level will be practically impossible without the mechanization of harvesting. Yet it must be emphasized that at the 20th Congress of the CPSU the task was set to create in the future in Middle Asia and first of all in Uzbekistan a new powerful region of irrigated cotton growing through opening the fertile virgin soils in the Golodyna ["hungry"] Steppe on an area of more than one million ha. It is also planned to open hundreds of thousands of ha. in the region of Central Fergana and in a number of other regions. It also is important to raise livestock breeding, vineyards, and other intensive branches of agriculture to new levels and greatly develop industrial, housing and cultural construction. The necessary reserves of labor power for the solution of these problems may be found first of all in the cotton growing brigades of the collective farms where up to 73% of all able-bodied collective farmers are now occupied.

As our charts of labor expenditure in terms of five-day periods show, the application of complex mechanization and improved agricultural technique will make it possible not only to lower the labor expenditure per ha. of sown area, but also considerably to equalize the demand for labor within limits of 200,000 to 250,000 men in the spring and summer months, and 300,000 to 350,000 men in the autumn months (provided the sown area under cotton equals 1.5 million ha. and yields up to three tons per ha.). At the same time it will be possible to increase the sown area load per able-bodied worker to four or five ha. compared with 1.15 ha. at present and this will make it possible to free 600,000 to 700,000 able-bodied workers from cotton growing (on its present scale). Such an increase of sown area load has already been achieved in some sections of the state farms Pakhta-Aral, Five Years of Uzbekistan, etc. However even this load is not the limit. In 1957 the Middle-Asian Machine Experimental Station of the USSR Ministry of Agriculture carried out cotton-growing experiments on lots of 25 to 40 ha., based on yields of three tons per ha. with a sown area load per man of 8 to 10 and even more than 20 ha. without the application of hand labor. These experiments produced quite satisfactory results. It is necessary to apply this experience under usual production conditions on collective and state farms.

The generalized criterion for the economic soundness of the development of a machine system is the reduction of production costs.

We made an attempt to find out the basic tendencies in lowering the costs of cotton production under conditions of complex mechanization compared with the present level of mechanization in Uzbekistan's cotton growing as a whole. Since calculations of the costs of production in cotton-growing collective farms for 1956 have not been carried out, we applied a method for the theoretical determination of all expenses on labor, fuel, amortization, current repair of engines and machines, upkeep of working cattle and horse-drawn implements (that is, all expenses connected with the cultivation of cotton and its harvesting but without the cost of mineral fertilizers and seeds) at standards and prices prevailing in the cotton-growing state farms of Uzbekistan. These calculations show that in 1956 payments to labor took 80.6% of the total expenses of production and the overwhelming part of this went for payments for the use of horses and for hand labor. Material expenses for the use of mechanical engines made 14% and for the use of horse-drawn implements, 5.4% of the total.

Under complex mechanization the total combined expenses for past labor and a part of present labor will be reduced 3.5 times per ton of raw cotton compared with 1956. The cost of labor per ton of cotton and material expenditures connected with the use of horse drawn implements will be reduced from six to seven times and material expenditures connected with the use of power engines will increase more than 50%. The structure of costs will be changed radically. The part of labor will be reduced to 38.5%, three-quarters of which will be paid for labor used in mechanized work. At the same time the part of the material expenditures for the use of power engines (amortization and expenditures on repair of tractors and machines, fuel, etc.) will make 58.5% of the total and more than half of all expenses of cotton cultivation and harvesting. Expenses for the use of horse-drawn implements will amount only to 3%. This means that the part of past labor in the expenses of production will increase, yet their total amount will be reduced; the part of past labor embodied in the products of socialist heavy industry and the part of skilled labor will increase. This means strengthening the leading role of heavy industry in

(Continued on Page 36)

. Fedotenkov

he Question of Stages in the eople's Democratic Revolution in Poland*

The democratic revolution in Poland was historically pre-ared by the Great October Socialist Revolution, it was its rther development and continuation. "Our people's revolu-on," we read in a report of the CC of the Polish United Work-s' Party to the Second Congress of the Party, "was histori-lly prepared by the Great October Revolution and by the nmeasurably important factor, the liberation of our country the victorious army of a socialist state, which not only freed from slavery, but also rendered us brotherly, comprehensive lp in restoring our normal life and in constructing a new cial order. ... The social-economic basis and the purpose of r people's revolution is the peaceful construction of a social-t economy as a material and cultural base of a society free m all exploitation and class divisions." (1) The problems the development of the people's democratic revolution in land are of great theoretical and practical significance. eir study is necessary for the correct understanding of the neral laws and peculiarities of socialist construction in ople's Poland.

The development of Poland along the road to socialism was termined in 1944-1946. This was the first stage of the de-lopment of the socialist revolution, the stage of the conquest power, its establishment and consolidation. During these ars the Polish people in a fierce struggle under the guidance the working class liquidated the domination of the bourgeoisie d landlords and established a people's power. They carried by revolutionary means basic social and economic reforms the country and entered upon the socialist road of develop-nt.

In a number of works the development of the people's revolu-n, the realization of revolutionary reforms in Poland, is mechan-lly divided into two separate stages: the stage of the bour-ois-democratic revolution and the stage of socialist revolu-n. This, in a sense, places in juxtaposition the democratic orms and socialist reforms and does not reflect the real aracter of the revolution and the revolutionary reforms in land.

The experience of the Soviet Union and of people's democratic tes in Europe and Asia shows that the basic laws of the ialist revolution and the construction of socialism are com-n and unavoidable for all countries which carry out the tran-on from capitalism to socialism. At the same time these s are conditioned by historically derived national peculiari-s and traditions affecting different countries and this deter-es the variety of forms and methods of transition of ividual countries to socialism.

t present, when revisionism is trying to contrast the national other peculiarities of given people's democratic countries he one hand and the basic, general laws of development for these countries on the other, throwing proper light on the stion of socialist revolution and the construction of socialism ifferent countries acquires very great significance.

ne of the laws of the transitional period is the revolutionary nsformation of large-scale capitalist industry into socialist istry and after that a comprehensive development and ngthening of socialist industry as a material base of social-.

Capitalist relations in Polish industry were considerably developed by the end of the 19th century. At the same time large-scale production began to play a decisive role in industry. By the beginning of the 20th century the economy and class relationships in Poland reached a level of development at which the class contradictions in the country began to approach the Western European type and a revolution without the proletariat had no firm point of support (See V. I. Lenin, "Works," Vol. 12, p. 177).

In 1918, when the Polish people obtained independence as a result of the victory of the Great October Socialist Revolution, the workers and peasants began to create their own organs of state power — the Soviets — and started a struggle for the socialist road of Poland's development. But there was no unity in the ranks of the working class. Moreover, in view of the peculiarities of the historical situation at that time the working class of Poland could rely only on the moral support of the Soviet people and the international proletariat, while the Polish bourgeoisie and landlords received direct help from world reaction and widely used for their own purpose nationalist slogans and nationalist elements among the leadership of the small bourgeois parties, including the Polish Socialist Party. This made it possible for the bourgeoisie and landlords to suppress the revolutionary attempts of the workers and peasants and to seize power in the country.

After the seizure of power by the bourgeoisie the working class began to prepare directly for the realization of the socialist revolution. At the same time the completion of the bourgeois democratic revolution became one of the immediate tasks of the working class of Poland in that revolution. As was pointed out in the program of the Polish Communist Party, only in this way can the working class lead the widest masses of the exploited and oppressed of the cities and villages in the revolution against the bourgeoisie and landlords.

The Second World War and the Hitlerite occupation did not remove from the order of the day the struggle of the Polish working class for realization of the socialist revolution, but they changed the conditions, forms and methods of struggle. The tasks of national liberation struggle became primary, requiring the creation of a broad national front with the purpose of uniting all people's forces for the liberation of the country from Hitlerite occupation. As the interests of the upper group of Polish bourgeoisie and landlords were intertwined with the interests of German capital, they acted against the national interests of the Polish people. Because of that the national front in Poland arose as a union of workers, peasants, intelligentsia, and small bourgeoisie in the struggle for national liberation from the invaders as well as from their accessories — the Polish big bourgeoisie and landlords. This national front was headed by the Polish Workers' Party, founded in January, 1942. As the final goal of this struggle the PWP proclaimed the liberation of the toilers from the exploitation and oppression of capital.

In occupied Poland two camps were formed: reactionary, with the big bourgeoisie at its head; and democratic, headed by the Polish working class.

Each of these camps had its own diametrically opposed aims, its own political and organizational centers and armed forces. Both camps were preparing for seizure of power.

Of decisive importance for a coherent and active struggle by the democratic forces in Poland was the heroic struggle of the Soviet people and its armed forces against the German fascist usurpers. This gave the Polish people favorable conditions for developing a struggle for national and social liberation. Yet,

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By way of stating the problem.

Boleslaw Bierut, Report of the Central Committee of the ish United Workers' Party to the Second Congress of the ty. State Political Publishing House, 1954, pp. 18-20.

under existing conditions, the liberation of Poland without the conquest of people's power headed by the working class became impossible. That is why in November, 1943, the PWP program advanced the task of conquering people's power by the working class and realizing radical revolutionary changes as a decisive condition for national liberation and the creation of an independent people's democratic Poland. In the economic sphere the following demands were advanced: confiscation of industrial enterprises, banks, transport, and other property seized by German capital, as well as the property of persons who acquired it as a result of collaboration with the occupants or as a result of war-time speculation; nationalization of large-scale industry, banks and transport; establishment of workers' control over production; confiscation and division of landlords' lands and lands seized by the occupiers; planned restoration of the national economy; after overcoming post-war difficulties, preparation and approval of an economic plan which would aim at industrialization of the country, liquidation of Poland's technical-economic backwardness and its transformation into a well-developed industrial-agrarian country, etc.

Thus the struggle of the Polish working class in close alliance with the broad masses of toilers, especially peasants, against the occupying power, was at the same time the base and the beginning of the struggle against the bourgeoisie and the landlords for the establishment of people's power and for carrying out through revolution a radical democratic and socialist transformation.

At the time of the liberation of the country from the fascist usurpers by the Soviet armed forces and by the detachments of Polish troops created on the territory of the USSR by Polish patriots, the national-liberation struggle reached a new stage. The Krajowa Rada Narodowa, established on the night of January 1, 1944, was a reflection of that new state — the stage of transformation of the national liberation struggle into people's revolution.

During the fascist occupation all power in the country, all basic branches of the economy, an important part of the peasant lands and property was seized by German capital. The Soviet army, together with the armed forces of the Polish people, not only liberated Poland from fascist occupants, but also destroyed the apparatus of fascist oppression in the country and transferred to the Polish people the national property seized by German capital. This was one of the most important conditions for the successful development of the revolutionary struggle by Poland's revolutionary class during the period of the country's liberation. At the start of Poland's liberation from the fascist occupants the Polish people, guided by the working class, began directly to establish people's power, taking over basic branches of the economy and first of all large scale industry, transferring land to the peasants, creating a new, independent, people's democracy and switching to the road of socialist development.

The Polish Committee of National Liberation was organized on July 21, 1944. This provisional government of workers and peasants in its July manifesto proclaimed the confiscation of industrial enterprises and other national property seized by German capital, confiscation of landlords' lands and their division among the peasants and agricultural workers, as well as lands which were in the hands of the occupants, etc. All these measures were in the main carried out in 1944 and 1945.

In the process of liberation of the country from the fascist usurpers the Polish working class, at the call of the PWP, began to take in its hands industrial and other enterprises and peasants and agricultural workers took over landlords' lands and lands which had been seized by the occupants. In the summer and autumn of 1944, in the liberated regions of Poland, the workers restored and set into operation industrial enterprises left and destroyed by the occupants and their accomplices; that is, they made them collective property. In this way the actual nationalization of industry and of other decisive branches of the country's economy began.

On the basis of its own experience as well as the CPSU's struggle for the seizure of industry and other decisive branches of the economy during the period of the October Revolution, the PWP at the end of 1944 and beginning of 1945, in Poland's occupied western territories, carried out the tremendous work of mobilizing the working class for saving industrial enterprises from destruction and taking over the basic branches of industry and other branches of the economy in the process of the further liberation of the country.

In saving enterprises from destruction by the Hitlerite invaders — especially in the western industrial regions of the country — the Soviet Army showed unsurpassed heroism.

In February, 1945, a plenum of the CC, PWP, set before the Party, the working class and the whole people the task of immediately carrying out a land reform and transferring to the state industrial enterprises, banks, means of transportation and other national property on the territory of western Poland as they were liberated from the fascist usurpers. For this purpose the Polish Committee of National Liberation, at the suggestion of the PWP, prepared a special operative apparatus of commissioners. However, a decisive role in taking over of industries was played by workers of the enterprises and workers' committees. In this way they fulfilled their high patriotic duty; they saved many enterprises from destruction and in a short time restored and set into operation a large number of ruined enterprises. The workers of enterprises and the workers' committees took stock of the remaining installations and materials and took a direct part in the transfer of enterprises to the management of the commissioners of the PCNL. They made a great contribution to the creation of a unified system of industrial management for the common national property.

According to the Central Statistical Administration of the Polish Republic, as of July, 1945, 17,139 industrial enterprises, or 57.1% of all enterprises in the country were collectivized; 14,666 enterprises, or 48.88% of the total were in the hands of the state, while in the most important branches (mining, metallurgy, electrotechnical, textile and others) the percentage varied from 59.6 to 93.2 of the total number of enterprises. When we consider the fact that enterprises with more than 50 employees made more than 12% of all industrial enterprises in the country, while those with 15 employees — 28.5% and with more than five employees —49.8%, it becomes quite clear that with the liberation of the country not only did large and middle-size industrial enterprises pass into the hands of the state, but so did a substantial portion of the small industrial enterprises. Consequently in 1944 and during the first half of 1945 the working class and the people's power carried out the socialist nationalization of industry. This was the beginning of the socialist revolution in which the PWP, skillfully combining leadership of the organs of people's power with the revolutionary initiative of the broad masses, secured the speedy and successful expropriation of the big bourgeoisie, landlords, and foreign capital and created conditions for the development of the country along the socialist road.

Liquidation of the dominance of big capital went on amidst sharp class struggle. The expropriated bourgeoisie, as well as reaction united around it, directed their main blow against the provisional state administration of the confiscated industrial enterprises and utilized for this purpose Stanislaw Mikolajczyk and their other representatives in the government. They tried to utilize the absence of a legislative act concerning the nationalization of industry and the legalization of its transfer to the state for taking from the hands of the working class the industrial enterprises preserved intact or restored. For this purpose they carried on a fierce struggle against the approval of a bill of nationalization and made desperate attempts to return the country to the capitalist road of development.

The Polish working class, fighting for democratic and socialist reforms in the country, answered the attempts to return individual industrial enterprises to the former owners with protest strikes. In September, 1945, the attempts of the expropriated bourgeoisie and of the reaction united around it to restore private property in industrial enterprises received a decisive rebuff on the part of the working class and the people's state which realized the will of that class. The creation of a socialist order in industry and other branches of the economy and development of the country along the road of socialism became a reality.

As a result of the heroic efforts of the Polish working class directed toward the preservation, restoration and setting into operation of industry and other enterprises as people's property, conditions were created for approval of a bill concerning the nationalization of industry and other leading branches of the

national economy. The First Congress of the PWP, which took place in December, 1945, noted that after the realization of the most important demands of the July manifesto, it was possible to legalize state ownership of the basic means of production by passing an appropriate law. The Congress entrusted the CC of the PWP to assure, in cooperation with other democratic parties, the passing of a bill to nationalize large and middle industry, banks and means of transportation. On January 3, 1946, Krajowa Rada Narodowa passed a bill for nationalization of industry, transport, means of communications and banks and thus state ownership of these enterprises became legal. In accordance with the law, industrial enterprises employing more than 50 workers per shift became the property of the state. At the same time the law gave the Council of Ministers the right to nationalize industrial enterprises important for the national economy even if the number of workers was less than 50 per shift. At the same time construction and certain other enterprises with fifty or more employees per shift remained private property.

The reactionary groups in their propaganda presented the passing of the nationalization bill as full destruction of private initiative in the economic field. They tried this in order to frighten the small bourgeoisie and mobilize them for a struggle against the people's power. But these attempts failed and this failure was of great importance, because the PWP conducted a policy of unity with the small bourgeoisie and various groups of middle bourgeoisie and cooperation with them in the interests of strengthening the economy of the country and the leading role of the working class in the state.

Thus in other European countries of people's democracy socialist nationalization of industry was carried out basically 1947-48, but in Poland it was actually carried out in 1944-45 and on January 3, 1946, it was consolidated by a legislative act. The international and domestic situation of that period helped to widen the social base of the revolution; it permitted the Polish working class and the people's power led by the working class to utilize more widely than it had been possible after the October Revolution in Russia various groups of the bourgeoisie and the positions they had preserved with the purpose of attracting allies, accelerating the restoration and development of the productive forces and strengthening the people's power as a form of the proletarian dictatorship. At that juncture it was possible and necessary. V. I. Lenin considered the utilization of various groups of the bourgeoisie before and after the conquest of power by the proletariat as a basic form of class struggle in the transitional period.

The leaders of the Polish Peasants' Party, Stanislaw Mikolajczyk and his partisans, being in fact agents of domestic and international reaction, presented themselves as champions of the toilers' interests and, attempting to deceive the broad masses of the people, advanced demagogic demands for carrying out land reform, nationalization of industry, etc. He and his partisans were not members of PCNL but entered the Provisional Government of National Unity in June 1945 after long negotiations and under conditions of preservation of the policy and program of the PCNL as a part of the program of the new government. This was done in order, among other things, to attract certain groups of toilers, especially peasants, to the side of socialist revolution, because at that time they still trusted Stanislaw Mikolajczyk and his partisans. Their participation in the government was one of the forms of utilization by the proletariat of the bourgeoisie and its representatives, one of the specific forms of the class struggle during the transitional period. In the process of this struggle the toiling masses of Poland better and better understood the real purposes of the representatives of the bourgeoisie and reaction and decisively came over to the side of working class. All this led to the broadening and strengthening of the social base of the revolution. The leading role of the working class in the state was strengthened and the position of the bourgeoisie and its influence on the masses was decisively undermined. The results of the general elections in the middle of 1946 and to the Sejm on January 17, 1947 made this clear.

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In the process of revolutionary transformation, side by side with the small producers' sector and private capital sector, a socialist sector appeared which soon became the leading and then the predominant sector in industry and other decisive branches of the country's economy. Poland's national economy acquired features characterizing the economy of a transitional period from capitalism to socialism.

In the socialist sector of the economy new, socialist relations appeared. Economic laws of socialism emerged and began to act, such as the basic economic law of socialism — the law of planned, proportional development of the national economy, the law of distribution according to labor, etc. The sphere of application of the economic laws of socialism in the country's economy rapidly widened and the sphere of action of capitalist economic laws diminished and these laws gradually ceased to function.

Taking into consideration the experience of the USSR, the people's government began to create the base of a new socialist system of industrial management founded on the principles of democratic centralism. Leading workers and toilers were widely used in the management of industry and work of preparing new cadres was started. This brought about an enormous increase of creative activity and growth of initiative of the Polish people.

In 1944-45 extensive work to organize the planning of industrial production was carried out and a basis was laid for the planned management of socialist industry and the entire Polish economy. The experience of building socialism in the USSR was taken into consideration. In April, 1948, the coal industry began to work on the basis of planned production and by the end of the year this was true of all leading branches of industry. The First Congress of the PWP made a decision concerning preparing a plan for the restoration and reconstruction of Poland's national economy. During the same period a unified system of wages depending upon the skill and conditions of labor was introduced in the state enterprises. Measures for improving the organization of labor and its pay and strengthening methods of measuring labor and consumption continued in later years. The state acquired more and more possibilities for utilizing the law of value for the regulation of money circulation, trade and the market, and for influencing small commodity production and private capitalist production.

As was pointed out above, after the liberation of the country large and middle industrial enterprises and a substantial portion of the small ones came under state management. During the war and fascist occupation more than 65% of the enterprises, especially large ones, were fully or partially destroyed and in 1945 were not yet restored and set into operation. Yet by the end of the same year about 70% of all industrial workers were occupied in these enterprises. As repair, reconstruction and setting into operation of the above-mentioned enterprises advanced, the number of workers occupied in them rapidly increased and in 1946 they made 78% of the total number of industrial workers. In chemical, textile, mining, metallurgical, and various other industries they made up 80 to 100% of all occupied workers. The total number of industrial workers in 1946 reached 1,200,000 as compared with 860,000 in 1937. In 1946 industrial production reached 81% of the pre-war level, while production of coal, power, locomotives, freight cars, agricultural machinery and implements, and some other important kinds of products exceeded the 1937 level.

In 1946 the part of the socialist sector in national industrial production amounted to 86.4% while in Czechoslovakia it amounted to 75%, in Hungary to 56% and in Bulgaria to 33.6%. In 1947 the part of socialist enterprises in industrial production reached 89.5% and the total industrial production — 108% of the 1937 level. At the same time production of the most important kinds of products considerably exceeded the 1937 level, the part of the state enterprises in production of these products making from 90 to 100%. (2)

(2) It must be noted that in 1945-1947 the total number of state enterprises decreased. This was caused by the fact that some of the enterprises were dismantled, in order to strengthen others, another part was transferred to cooperatives, and a number of small enterprises were returned to their former owners. The total number of state enterprises employing five workers or more amounted to 14,666 in 1945, 10,128 in 1946 and 6,290 in 1947.

Production of the Most Important Kinds of Industrial Products in 1947 (3)

kinds of products	unit	1937	1947 total	1947 state sector	1947 state sector as % total prod.
power[4]	mil kwh	3628	6613	6613	100
coal	mil t.	36.2	59.1	59.1	100
coke	000 t.	2328	4465	4122	92.3
steel	000 t.	1468	1579	1579	100
metal cutting tools	000 t.	1740	4080	3909	98.5
ag. machines & implements	000 t.	21205	36431	33609	92.2
freight cars	no.		490	490	100
transformers	no.	1123	1130	1129	99.9
cement	000 t.	1289	1522	1522	100
nitrogen fertilizer	000 t.	220	238	237	99.1
superphosphate	000 t.	177	195	183	93.8
paper	000 t.	195	207	206	99.5
factory-made leather shoes	000 prs.	1501	2693	2693	100

Thus the rapid growth of industrial production was reached basically through an increase of production of the state enterprises. In 1946-47 the socialist enterprises occupied a prominent position in industry and in the decisive branches. In the production of the most important products they reigned supreme. All this is convincing proof of the socialist character of the reforms in Polish industry carried out in 1944-1946.

The successful realization of these reforms as well as the reunification with united Poland of western lands created the necessary basis for further rapid development and strengthening of the socialist economy, and on this basis for improving the livelihood of the Polish people. On the basis of the achievements of the people's revolution and with the brotherly help of socialist countries, and first of all, of the Soviet Union, the Polish people was able in a short time to restore its national income, to begin on a broad front the reconstruction of industry on a new technical basis, and to start the socialist industrialization of people's Poland.

During the period of functioning of the three-year plan of restoration and reconstruction of the national economy (1947, 1948, 1949), the average annual increase of industrial production amounted to 30.6%. In 1949 the part of the socialist sector in industry reached 94.4%. In the basic branches of industry, and especially in heavy industry, the socialist sector won a complete victory. The production of means of production which amounted to 47% of the total gross industrial production in 1937, increased to 54% in 1949, while the part of industry in the total gross industrial and agricultural production increased from 47.4% in 1937 to 64.1% in 1949.

Restoration and development of industry was accompanied by the rapid quantitative and qualitative growth of the working class and by the strengthening of its leading role in the country.

During the Six Year Plan for the development of the national economy (1950 to 1955 inclusive) the Polish people, under the leadership of the working class, with the Polish United Workers' Party at the head, relying on the achievements of the first period of the revolution and the successes obtained in that period, took a new important step in the construction of the economic base of socialism. In 1955 the part of the socialist sector in total gross production amounted to 99.5% and the part of the means of production in the gross production of socialist industry reached 56.2%. The part of industry in the gross production of industry and agriculture exceeded 80%. During the operation of the Six Year Plan production of power, coal, coke, steel, machine tools, cement, chemical fertilizers, etc. was greatly increased. In 1955 the volume of gross production of socialist industry amounted to 285% of the 1949 level, while for the means of production and means of consumption the corresponding figures were 296% and 271%. Among the branches of heavy industry machine-building and the chemical industries grew especially rapidly.

The achievements of the Polish people in the development of a socialist economy and primarily of socialist industry during the periods of the three-year plan and the six-year plan would be impossible without the revolutionary social-economic reforms of the period of 1944-1946. These achievements once more prove the socialist character of those reforms.

During the years of socialist reconstruction the people's power achieved great successes in liquidating the technical-economic backwardness of the country and in transforming it into a socialist state, well developed economically. In the prewar period output of the most important kinds of products per capita in Poland was much lower than the average world level of that period, but now people's democratic Poland considerably exceeds the present average world level. In the production of pig iron, steel, and some other kinds of products per capita Poland is already ahead of Italy and in coal production is ahead of all capitalist countries with the exception of England. The people's power laid a firm basis for the completion of the socialist transformation of the whole national economy of the country, including agriculture, for further growth of production and, on this basis, for a systematic rise in standards of living of the Polish people.

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All this makes the following conclusions possible. The years 1944-1946 formed the first stage in the development of the people's revolution in Poland as a socialist revolution; this was the stage of the conquest, establishment and consolidation of people's democratic power as one of the forms of the dictatorship of the proletariat. The reforms introduced in industry and other branches of the Polish economy during those years should be considered as socialist reforms which established a strong economic base for the further development of socialist construction in people's Poland.

(3) Rocznik statystyczny, 1949, Warszawa, 1950 pp. 47-50.
(4) This does not include power stations with a capacity of less than one thousand kw.

Gladkov

efense of Capitalism under the Mask of "Democratic Socialism"

ncerning the Draft of a New Program of the Socialist Party of Austria)

the historical Declaration of the Conference of the represent-es of Communist and Workers' Parties of socialist countries emphasized that the basic content of our epoch is the tran-n from capitalism to socialism begun by the Great October alist Revolution in Russia.

he October Socialist Revolution was the starting point of a era of the world history; it opened the road to the liberation eoples from the yoke of imperialism, to the establishment eal democracy, to the building of socialism. The victory of October Revolution and the creation of a socialist mode of uction in our country proved with deeds the accurateness e laws of socialist transformation of society discovered by xism-Leninism. These laws received further conforma-in the practice of the socialist revolution and construction cialist society in the people's democracies of Europe and

der contemporary conditions, when world development is rmined by competition between rising socialism and declin-mperialism, the apologists of the old, obsolete society apply heir efforts to distort the essence of socialism, to pass over dvantages and achievements in silence, to divert the attention e toiling masses from active struggle against capitalism or socialism, the ideas of which are taking hold of the con-sness of newer and newer millions. In fact the world geoisie is helped in that respect by various representatives formism.

is may be seen from a new draft program of the Socialist y of Austria prepared by Benedikt Kautsky and other theo- of so-called "democratic socialism." The essence of this program, if we forget its socialist phraseology, reflects main tendency: to save the capitalist regime from further lutionary convulsions. For this purpose all and every means sed toward denigration of the socialist regime in the USSR eople's democracies and towards the embellishment of alism.

e ideologists of "democratic socialism" try to stigmatize ism as "obsolete." They violently attack the Marxist theory cialist revolution and dictatorship of the proletariat as a de-e condition and tool of the socialist transformation of the ty. In the draft program of the Austrian socialists the long rupt theories of the peaceful growing of capitalism into so-sm are brought back, or better, of the preservation of capi-m under the "socialist" signboard. "The road to this goal," eformists say of their socialism, "is democracy." And here, mocracy they have in view the contemporary bourgeois which is presented in the draft program as "the state of al prosperity." It is clear that such a road is calculated not ing the transition to socialism, but the defense and perpetua-f capitalism. Life fully dismissed and refuted the reformist pportunistic theories about the possibility of the gradual ing of capitalism into socialism without a socialist revolution he dictatorship of the proletariat.

urgeois propaganda loudly proclaims that contemporary alist society and, first of all, United States society has al- become a classless society where the people already own eans of production and divide the incomes among themselves, e the capitalists have become toilers and the workers owners wners) of enterprises. In essence the "democratic social-preach the same thing. They try to refute Marxism-Lenin-ith arguments that the capitalist regime itself lately changed ally and because of that there is no necessity of its revolution-transformation. Reality, however, completely refuted all theories about the tranformation of monopolistic capitalism new "people's capitalism" or "democratic socialism."

Contemporary capitalism is characterized by the further concentration and centralization of capital and the increasing role of monopolies in the national economy. For example, according to the data of the bourgeois press in the United States the 500 largest industrial corporations conbributed about half of the industrial production in 1955. These corporations owned 59% of the total sum of the assets of all industrial firms; in the enterprises of these corporations about 50% of all industrial workers were employed. Among these 500 corporations the main role is played by 100 giants. The number of billion-dollar corporations, those whose assets exceed one billion dollars, increased from 31 in 1941 to 77 in 1955. The largest capitalist corporations control a larger and larger part of industrial production. Parallel to the concentration of production the centralization of capital is going on. In the United States more than half of the capital of all corporations belongs to 0.1% of the corporations. The same situation exists in all other capitalist countries. All this confirms the accuracy and strength of the Marxist-Leninist characterization of the nature of capitalism and of the laws of its development.

The "democratic socialists" picture contemporary bourgeois society as "a society where the number of large and small passive shareholders, interested in the preservation of the capitalist mode of production is rapidly growing." In this "new" society, writes one of the theorists of the Labor Party in England, Cole, in his book "Capitalism in the Present World" (1957), "an increasing number of workers is rising to the position of bourgeois respectability." In the draft program of the Austrian socialists as well the acquisition of shares by "broad groups of the population" is greeted with approval. Right socialists advise the working population to be thrifty, they say that "without significant savings of the masses one cannot expect sufficient accumulation of capital."

All such bourgeois and reformist theories about "democratization" of capitalism, transformation of workers into owners of enterprises through wide sale of small "people's " shares are refuted by life. Actually, as it was shown by Lenin, with the acquisition of some shares by some working people in no case do they become owners of corporations, wealthy people. The bosses of capitalist monopolies and corporations receive the advantages from the sale of small shares because this gives them the possibility to dispose of even the crumbs of "people's" savings. In spite of the noise of bourgeois propaganda about mass ownership of small shares in fact only a few skilled workers — the representatives of the so-called workers' aristocracy — own shares. This could be proved with examples taken from the development of the Austrian economy. In 1957 in Austria a sale of so-called "people's" shares of the two state banks was carried out. Into whose hands did these shares find their way? The results of an investigation by the well-known Austrian economist Karl Ausch show that "ordinary" people acquired only 7% of these shares. 62% of the sold shares were bought by those who invested more than 10,000 shillings in this business.

The theorists of "democratic socialism" try to prove with all available means that the development of capitalist sociaty is going on in a different way than it was predicted by Marx. In the new draft program the Austrian Socialist party affirms that contemporary society is not developing according to the "Communist Manifesto." "Instead of the division of society into proletarians and capitalists many classes and groups of the population have been formed; also instead of irreconcilable antagonism between two classes there arose a complex of various interests which can be combined in different ways." However, this conception of class harmony and community of interests of capitalists and workers, pleasing to the bourgeoisie, has nothing to do with real-

ity. Contemporary capitalism is characterized not by the disappearance or reduction of antagonisms between the proletariat and bourgeoisie, but, on the contrary, by the deepening of the abyss between exploiters and the laboring masses. In the United States 1% of the population own 59% of the national wealth, while for 87% of the population — the laboring masses creating material goods — only 8% of the national wealth remains. A similar situation is observed in other capitalist countries. These hard facts refute the "theory" of equalization of incomes of capitalists and workers, of the liquidation of poverty and the uninterrupted rise of the living standards of the laboring masses in capitalist countries.

In the capitalist world and especially in colonial and dependent countries, millions of laboring people live in poverty, and ruination and pauperization of the main mass of peasants continues. Such is the objective evaluation of the situation of the laboring people given by the true representatives of their interests — representatives of the Communist and Workers' Parties. "The laboring people of the capitalist countries now live under conditions which more and more strongly convince them that the only way out of their difficult situation is socialism."*

That is why the apologists of capital apply all efforts to draw away the attention of the laboring people from the struggle for the revolutionary transformation of society along socialist principles and to poison them with reformist ideas of "collaboration of labor and capital," with illusions about the possibility of a gradual "growing" of capitalism into socialism.

In their draft program the Austrian socialists assert that contemporary capitalist society is already "under enormous influence of the socialist elements which fully changed the development of liberal (that is, capitalist. — I. G.) economics." They don't bother about proofs of this "discovery," because they know well that neither science nor practice can confirm such a miraculous transformation of capitalism into socialism.

The reformists proclaim that the contemporary state is an "element of socialism;" they present it as a kind of super-class organization the aim of which is to improve capitalism. The right socialists declare in their draft program that the bourgeois state takes care of a just distribution of the national income and with its tax and social policies considerably limits the right of capitalists to "dispose of profits." In reality the bourgeois state through taxes squeezes out a larger and larger part of the income of the laboring masses and through spoliation of the masses makes available for the capitalist monopolies additional sources of enrichment. Facts from Austrian reality eloquently speak of this. In 1957 the wealthy classes of Austria received in state subsidies about five billion shillings out of taxes collected from the laboring people. This is considerably more that all the expenses of the state for social and cultural purposes.

In the draft of the new program the Austrian socialists repeat the old bourgeois fables about "general prosperity" under capitalism. Right socialists speak of the possibility of obtaining "full employment" which is declared as a "starting point" of contemporary economic policy in their program. "The society which is not able to guarantee labor to all those able-bodied and willing to work is contrary to the meaning and content of economics," declare the authors of the draft program. But unemployment is organically inherent in the capitalist economy and is extremely advantageous to capital.

The reformists preach a "comprehensive and elastic" policy in order to encourage "either investments or consumption" with the help of "anticyclical" measures and in this way to succeed in the development of the capitalist economy without crises. It is not difficult to see that this economic policy of the "democratic socialists" is based on the theory of John Maynard Keynes — a fashionable bourgeois-apologetic theory of "regulated" capitalism overcoming crises and the cyclical development of capitalist economy, reducing unemployment and even securing full employment through regulation of the level of investment, credit, and monetary circulation. The Keynesian theory is willingly utilized by the bourgeoisie as the justification for an offensive against the standards of living of the laboring people, for praising militarization of the economy and the armament race, all of which is for the sake of high capitalist profits.

Falsifying reality, the authors of the draft program declare that "the experience of the post-war period shows that the rapidly rising standard of living of the laboring masses makes the development of the economy without crises easier." Yet in fact the whole history of capitalism shows the impossibility of such a development of the capitalist economy. Economic crises took place also after the Second World War. United States' industry suffered from a crisis in 1948-49 and went through a serious reduction of production in 1953. In England in the post-war years industrial production has fallen on three occasions. If imperialist countries succeeded for the time being in postponing the coming of deeper convulsions this happened not because of the "rapidly rising living standards" of the people, but because of militarization of the economy and the armament race, in which an enormous part of production is directed toward military-parasitic consumption.

The right socialists try to assure the workers that they have already obtained "political and social equality" with the bourgeoisie in the capitalist countries. "Social injustice which formerly was the lot of the working class has been eliminated;" for complete equality the workers need only to obtain from the hands of the "democratic socialists" "economic equality." And this is promised to the working class in the draft program of the Austrian right socialists. It is quite clear that such promises cannot be realized because they stand in contradiction with the very nature of capitalist society. To secure real (and not formal) political, social, and economic equality for all members of society would mean to destroy the domination of capital, to liquidate exploitation of man by man. For this it is necessary to transfer power into the hands of the workers and peasants and to put an end to private capitalist property.

The economic program of the Austrian right socialists by its character from beginning to end is bourgeois-apologetic. For example, they picture the "ideal" social regime which they present as socialism in the following way: "The socialist party of Austria aims at an organization of the economy which would guarantee the production of all commodities and their just distribution. It aims through social planning to overcome uncertainty in the development of the economy connected with the capitalist private economy." In the program there are many high-sounding phrases about a "perfect social economy which would be guided not by interests of possession or profit but by interests of society." Explaining these program aims of "democratic socialism" Benedikt Kautsky sings the praises of the "collectivized economy" in capitalist society as "an organization of the economy which, so far as possible, would secure the interests of all."

The authors of the draft program intend to build their "perfect social economy" on the base of contemporary capitalism with private property preserved, but with some limitations of the "monopolistic tendencies of the private entrepreneurs." It is stated in the program that under "democratic socialism," "wide spheres would be left to free enterprise activity," that is, for private capital. However such a "social economy" has nothing in common with real socialism.

A socialist economy can be based only on social ownership of the means of production. If the conquest of state power by the working class in alliance with the peasants is a decisive political premise of the socialist transformation of society, then the liquidation of private capitalist property in the means of production and the establishment of social property represent the main economic task of the socialist revolution, of building socialism.

Marxism-Leninism not only placed a scientific basis under the objective necessity of liquidating private capitalist property which became a drag on the progressive development of mankind, but also proved the practical possibility of replacing it with common property in the means of production. Karl Marx showed that the inevitable transformation of capitalist private property prepared by the progress of history into social property will not present special difficulties because "the masses will have to expropriate only a few usurpers."*

* Documents of the Conference of the Communist and Workers' Parties' Representatives in Moscow, November 1957." State Publishing House for Political Literature, 1957, p. 8.

* Karl Marx, "Capital," Vol. I, 1954, p. 767.

concentration and centralization of capital in the epoch of rialism, domination of monopolistic associations in indus- nd banking, as was shown by V.I. Lenin, make easier the ition of the basic means of production, of the commanding ts of the national economy into the hands of the workers' easants' state for their use in the interests of the entire society. what way can the urgent transition of the means of produc- nto social property be hastened and realized? Scientific lism and practice has given a clear answer to this ques- The state of workers and peasants created by a socialist ution must take into its hands, must nationalize the large- industry, banks, railroads and other basic means of pro- n and circulation. In this way the people who create all rial goods with their labor will become their real masters. e great October Socialist Revouution which took the means oduction from the landlords and capitalists and transformed into social property for the first time contraposed to bour- property socialist property. Common socialist property ne the base of the new society, the source of growth of its mic might, of material prosperity and culture of the free es. The historical experience of the USSR and of the peo- democracies has refuted the bourgeois theories about the vable and permanent character of private capitalist prop- In a short time a society based on socialist property proved questionable superiority over a society based on private list property.

ontradistinction to scientific communism "democratic so- m" tries to convince the masses that socialism is possible t the revolutionary collectivization of the means of pro- n. The authors of the new draft program of the Austrian socia- rty declare that even now in bourgeois Austria nationaliza- to an important degree fulfilled its purpose" as a transitional re leading to the "social economy." In the draft program entioned that private capital has already been "success- substituted with the state." However in reality private capi- property remains dominant in the Austrian economy. As nationalized enterprises, first of all they do not play a de- part in the industrial production of the country (in 1956 20% of the total number of workers in industry were em- in the nationalized enterprises and power production). d, lately they have been increasingly absorbed by foreign olies (for example, a number of important enterpises oil industry were transfered into the hands of British- ican capital). And — the most important fact, and the draft am is silent about it — with nationalization by the bourgeois of individual enterprises or branches of the economy their list nature is not changed. State ownership of some enter- , banks, etc., means their passage into the hands of the eois state as a collective capitalist. Means of production these conditions continue to remain separate from the pro- s — workers — and stand in opposition to them as capital. itation of hired labor remains intact.

apologists of capital who embellish this social regime and he necessity of its revoutionary transformation picture passing of means of production into the hands of the state cialization of the economy." In fact collectivization of ction that takes place in the form of state monopoly capital a material preparation for socialism. For revolutionary sm "the proximity" of state monopoly capitalism to social- , as was emphasized by Lenin, an argument for the close- ease, feasibility and immediate necessity of the socialist tion. *

e draft program of the Austrian right socialists "effective l over cartels and similar associations, carried out by the nd social organizations" is mentioned. But the bourgeois tself is an organ of these cartels and other monopolies and er their control. As to the social organizations of the labor- ple, they do not have real rights and possibilities for the l of capitalists. For effective control one has to have state and economic power (ownership of means of production); this is in the hands of big capitalists.

ncrete analysis of the economic part of the draft program Socialist Party of Austria shows that under the cover of cratic socialism" in reality there appears a skillfully embellished capitalist regime which is presented by the reformists as a new society of "mixed economy," consisting of a small nationalized sector and of the dominant sector of private capital in industry. The program foresees agriculture remaining in private hands; it would preserve not only peasant farms, but also large capitalist enterprises and landlords.

"Democratic socialists" declare themselves partisans and defenders of small farms, they ask for a "planned increase in the number of small farms" which, according to them, even now play the "main part" in Austrian agriculture. The facts, however, show that in Austria capitalist farms predominate, those which the draft program mentions only in passing: "an insignificant minority of the large landowners who, using machinery, transform their farms into capitalist farms of the American type." In the draft program there are many promises about allotment of land to peasants having small farms, about helping small farms with machines, about establishing prices on agricultural products "acceptable" to peasants and to city consummers. Austrian socialists intend "to prevent the peasant flight from the villages," promising to the rural population that it will have "the same material and cultural level of life as the rest of the population." But even "the rest of the population" is not particularly prosperous in the extolled state of "general prosperity." The overwhelming part of the workers in Austria at the existing level of wages, rising prices, and high taxes can hardly make ends meet. Even leaders of the reformist labor unions speak about this.

"To guarantee the economic independence of agriculture" the draft program foresees "encouragement of cooperation by all means," limiting it to the sphere of marketing. The reformists assure peasants that "stable marketing of agricultural products" is sufficient for the prosperity of agriculture, for freeing peasants from the threat of ruin and from being enslaved by big capital and landlords. In reality, under capitalism, neither small farms nor cooperatives can save the laboring peasants from privation and poverty. This is known to the peasants of all capitalist countries through centuries of experience.

The historical example of the Soviet Union, China, and other socialist countries begins to show the peasants of the whole world the advantages and salvation of the socialist road of village development. They begin to see that only productive cooperation plus the existence of people's power can free them from poverty and exploitation and create conditions for a prosperous and cultured life. The experience of the USSR and the people's democracies definitively upset the "theory" of the apologists of capital that peasants are intrinsically opposed to socialism. Practice proved the correctness of the Marxist-Leninist thesis concerning the possibility and necessity of the successful socialist construction by joint and harmonious efforts of workers and peasants.

"Democratic socialism," as it is clear from the new draft program of the Socialist Party of Austria, preserves untouched the class structure of the bourgeois society: there remain capitalists and proletarians, peasants, kulaks and landlords. In this "socialist" society exploitation of the laboring people by capitalists will be preserved. The reformists do not intend to attack the dominance of capital and the privileges of propertied classes; they promise only "defense of the weak from the oppressing influence of capital;" they promise only to limit "unjustifiably high" incomes of the "unproductive elements," and by a method which remains unspelled, "to diminish social discrimination against the laboring people." The reformist draft program of the Austrian socialists in fact would bring not the liquidation of capital, but only the softening of its contradictions through "collaboration of labor and capital."

The right socialists assure the laboring people that their duty is not only submissively and diligently to work for capitalists, but also to carry the main burden of taxes collected by the bourgeois state in order for it to "solve its numerous problems," and they consider that one of the main problems is comprehensive help to the capitalists in order to influence business cycles through a "long-term program of capital investments which should be financed through tax receipts and loans," that is, at the expense of the masses.

In the program of the Austrian socialists there are many beautiful words about "economic democracy" which is declared to be a "symbol of our time," about the right of the workers to take

* V. I. Lenin, "Works," Vol. 25, pp. 414-415.

part in the management of enterprises, etc. But all this has no real significance so long as private capitalist property, exploitation of the laboring people, and the power of the bourgeoisie remain.

The imperialist bourgeoisie and its sycophants, worried by the successes of the socialist countries in the development of their economy, science, and technology in raising the standard of living of the people, try to slander the socialist regime. In the program of the Austrian socialists there are quite a few fabrications. The partisans of "democratic socialism" misinterpret the nature of Soviet society, its economic basis, the nature of the state of workers and peasants. They deny the socialist character of the Soviet economy, repeating the Trotskyite statements concerning the state capitalist nature of the nationalized enterprises in the USSR, statements long ago refuted by life.

As a result of socialist nationalization, the means of production long ceased to be capital and became the property of the people, of the laboring masses through the Soviet state. This radically changed the character of enterprises: factories and works nationalized by the state became socialist enterprises. It is known that the character of an enterprise is determined by the character of production relations. The Soviet state enterprises belong to the people. In these enterprises there are no capitalists, there cannot be exploitation of man by man; socialist relations of comradely collaboration and the mutual help of free toilers prevails.

Characterizing the main features and basis of socialism as the first phase of communist society, V. I. Lenin emphasized one decisive fact, namely, that the means of production ceased to be the private property of individuals, that they belong to the whole society. Each member of society, doing a certain part of the socially necessary work, receives a corresponding amount of consumers goods. Under such conditions exploitation of man by man is impossible because it is impossible to turn the means of production, factories, machines, land, etc. into private property. If private property is the source of exploitation of the masses, the base for the subordination of production to selfish purposes of obtaining profit by the capitalists, the transfer of the means of production to the possession of society makes it possible, as V. I. Lenin pointed out, "to subordinate social production and the distribution of products to scientific considerations for making the life of all laboring people easier, making real prosperity possible for them."* All this has materialized, all this has become a reality in the socialist society built in our country. Such a society is being built successfully by the laboring masses of the people's democracies.

One of the main pillars of socialism and a source of its enormous advantage over capitalism is the planned development of the national economy. As a counterbalance to the socialist planned economy in the USSR the reformists intend to create a social economy "with planning and management without compulsion." The draft program of the Austrian socialists foresees the organization of "a small planning commission which is not subordinated to the government." This "planning institution which will have no executive power" will prepare a long-term "broad economic plan" which will embrace all basic branches of the national economy. "Planning should embrace goods and services, the consumption of which (in constant prices) remains stable or can be determined precisely." On the basis of this "unified plan" all enterprises (including numerous capitalist plants preserved under "democratic socialism") will voluntarily and at their discretion "conclude among themselves long-term agreements about deliveries and services at fixed prices." In this way "a perfect social planned economy" will be realized, directed toward "satisfaction of the consumer" ...

Is a planned national economy possible without social ownership of the means of production, without conquest of power by workers and peasants? This question was answered in life negatively. A planned economy is a national economy based on social ownership of the means of production; under it the means of production and labor are used by society (through the people's state) in an organized way for the development of production in the interest of satisfying the needs of all members of society. Such an economy is incompatible with capitalism. That is why all and every attempt at "planning" in a capitalist society inevitably ended in failure. The same fate is awaiting the blueprint for a "planned economy" concocted by the Austrian right socialists. Let us suppose that their "planning institution" prepares some economic plan. However it inevitably will be left hanging in the air, because being deprived of a real economic base — social ownership — and of the necessary political premise — state power in the hands of workers and peasants — it cannot in any way influence the development of the economy.

The "democratic socialists" see the ideal "social economy" as a conglomerate of disconnected enterprises of indefinite kind which exist and act independently. The nationalized enterprises also will be transformed into such "social" enterprises. In the draft program these "social" enterprises are characterized as "independent economic units" which carry their business on a commercial basis and are "rather independent of the state's influence." Who will manage these "social" enterprises — on this question the draft program answers very vaguely: the management of these enterprises will be influenced by the government, parliament, consumers, organized in "free" associations, labor unions and cooperatives and, finally, by the workers and office workers. Through the draft program runs a strong aversion of the Austrian socialists to a centralized planned economy; it is declared to be "foreign and harmful to the interests of the really social (collective) economy."

The question of centralized planned management of the economy is one of the basic questions of the theory and practice of the socialist construction, organization and development of the socialist economy. Marxism-Leninism proved theoretically and the experience of the USSR and the people's democracies proved in deeds that a socialist society is impossible without planned organization of social production and distribution of the product on the scale of the whole state. A planned economy is based on the social property which is in the hands of a socialist state and cooperative organizations. Through the Soviets of deputies of the laboring people, through collective farms and cooperative organizations the people are managing all these enterprises which are socialist property.

V. I. Lenin and the Communist Party resolutely resisted all manifestations and moves of syndicalism. V. I. Lenin thought that a transfer of the nationalized enterprises which are common property into the hands of a group, of a collective of workers is contrary to the public character of socialist property, would mean undermining the centralized economy; and the socialist planned economy can be only a centralized economy. V. I. Lenin considered "every direct and indirect legalization of the ownership of a factory by workers or by some profession in a particular type of production"* as a complete surrender of socialism.

The Soviet people not only liquidated private capitalist property and established social property in the means of production for the first time in the history of mankind, but also worked out a system of enterprise management corresponding to this form of property, a system for the whole range of social production and distribution. This system of management is based on democratic centralism, on the proper combination of centralized state guidance of the economy with the maximal development of the creative activity of the laboring masses in the management of production, with comprehensive use of the initiative of the local organs in economic construction.

The experience of the USSR and of the people's democracies showed that concentration of the means of production in the hands of the workers' and peasants' state, the state planned guidance of the national economy, makes possible the most effective use of the productive forces, their continuous development on the basis of advanced technique in the interests of society as a whole. During 40 years of its existence the Soviet power proved in deeds the advantages of the socialist planned system of economy over the capitalist economy with its anarchy of production and crises.

The enemies of socialism, including the authors of the draft program of the Austrian socialists, in order to embellish capitalism and distort the essence of the socialist regime in

* V. I. Lenin, "Works," Vol. 27, p. 375.

* Pravda, April 22, 1957 (New documents of V. I. Lenin).

he USSR, repeat the old fables about "free labor" in the bourgeois countries and "forced labor" under socialism. These ables were refuted by life a long time ago. The whole history f the economic and cultural construction of the USSR after the October Socialist Revolution represents a bright chronicle of he labor heroism of many millions of Soviet people. With the reative labor of the people freed by the revolution a socialist conomy of many thousands of industrial enterprises, collective arms, machine-tractor stations, etc., was built. Cultural construction was carried out on a gigantic scale and the level of cience and technology was raised to an unheard of level. All his is a result of the greatest transformation: the replacement f unfree labor for capitalists and landlords with free labor for neself, for one's society.

Free creative labor is that main and decisive force which determines the uninterrupted progress of the economy and culture f a socialist society. The victory of the socialist revolution nd the transfer of the means of production into social property reated a new stimulus for labor, opened new powerful sources f social progress, because for the first time scope was given o the activity and conscious efforts of the laboring masses.

The world's first socialist state had to overcome unheard of ifficulties which were made worse by the poor economic inheritance received by the people's power from the bourgeois-andlord regime. Being a country with an average level of apitalist development, Russia, technically and economically, as considerably behind the chief capitalist countries. In addion its national economy was damaged by the First World War. he imperialist powers tried by all means to make more difficult and wreck socialist construction in the USSR. The peaceful, reative work of the Soviet people was twice interrupted by evastating wars imposed by foreign imperialists. These wars nd the restoration of the national economy which followed them ook, on the whole, almost two decades out of 40 years of the oviet power's existence.

Utilizing the tremendous advantages of social property in eans of production and a planned economy, the Soviet people ith their heroic labor transformed a former agrarian country to a mighty industrial power in a short time. In 1957 the indstrial production of the Soviet Union was 35 times the level production of 1913 and 46 times the level of production of 917. All this was achieved actually in 20 to 22 years of peaceul economic construction. In order to understand how grandiose jump was made by our country in these years, it is proper to member that for an increase of production of about 30 times e United States, Germany, and England required from 80 to 0 years.

Socialist agriculture — collective and state farms — achieved eat successes. The victory of socialism in the villages opened de possibilities for the uninterrupted growth of agricultural oduction. The sown area under all cultures increased compared with 1913 by more than by 50%; wheat — almost 100%; all chnical cultures — by 170%; cotton and sugar beets — by 200%. he marketable portion of agricultural production increased veral times, while the part of the population occupied in agriculture in the total population was reduced by half. Commodity oduction of grain in 1956 increased by comparison with 1913 most by 200%; of wheat — by 400%, of raw cotton, sun flower d vegetables — by 500%, of sugar beets and potatoes — almost by 200%; the marketable portion of meat increased by 0%, of milk and wool — by 200%. Collective farmers warmly eeted the call of the Communist Party, and are successfully veloping the struggle for catching up with the United States the near future in national per capita production of the basic oducts of livestock.

All this demonstrates the great power of the free and creative oor of workers, peasants and intelligentsia in the Soviet soalist society. High production and the scientific-technical level ached by our country permits even wider utilization of the ormous natural resources, even more rapid development of great productive forces of the country. The report of Comde N. S. Khrushchev to the Jubilee Session of the USSR preme Soviet in November, 1957, presented a picture of the eat perspective of economic construction in our country. The viet Union in the next 15 years can not only catch up with, but en surpass, the present level of production in the United States in the most important kinds of products. This will be a new gigantic step forward in the development of Socialist production.

The authors of the draft program of the Socialist Party of Austria, trying at any cost to denigrate the Soviet socialist regime are chattering that the economy, technology and science are being developed in the USSR with aggressive purposes, at the expense of the interests of popular consumption, through lowering the population's standards of living. Such fabrications are so contrary to reality that they are refuted even by the bourgeois representatives.

The american journalist W. Hearst who visited the Soviet Union in November, 1957, ridicules such illusions, as if "the sensational success with sputnik and other Soviet successes in the field of science and technology were achieved only because the leaders concentrated all resources on them to the detriment of such popular needs as housing, clothing and food. One glance is sufficient for one to give up this consoling myth." Another American journalist, F. Conniff, declared at a press conference in Washington that the people whom he met in Moscow and who are called in the United States "slaves" looked happy. The welfare of the Soviet people is rising uninterruptedly and rapidly — such was the conclusion of the members of the British Parliament D. Silverman and S. Swingler after a visit to the USSR. Pointing out the tremendous scale of housing construction and the construction of schools, hospitals and theaters, they said that "this may serve as an answer to the stories that the Soviet Union is sacrificing the standards of living of its population for the sake of sputniks and military preparations." Such an evaluation is typical of many persons, even among the opponents of the Soviet regime who visited the USSR.

The socialist economy opens wide possibilities for the uninterrupted rise of the people's standard of living. The supply of material goods available for the laboring people in the USSR now exceeds the 1913 level several times. If we did not have two wars imposed upon us by the imperialists and the losses and destruction connected with them, the Soviet country by now would have an abundance of material goods. The socialist regime in reality guarantees to all its members the right of work, the right to obtain an education and the right to rest. On the basis of the continuous and rapid growth of the productive forces of the socialist society the material and cultural needs of the laboring people are satisfied more and more fully. Here lies the decisive advantage of socialism over capitalism.

More than one-third of mankind has entered the road of socialism. The laboring people of those countries where the capitalist order still reigns are becoming more and more convinced of the necessity of the transition to socialism. Marxism-Leninism showed the sure path and forms of this transition. The working class and its vanguard — the Communist and Workers' Parties — aim at the realization of the socialist revolution and the transfer of the means of production into the hands of the people by peaceful means. Marx, Engels and Lenin pointed out that such a realization would best answer the interests of the working class and of the whole people, it will be in the all-national interests of the country. In case of savage resistance of the reactionary exploiting classes the transition to socialism inevitably takes a different form.

It must be emphasized that the peaceful road of the socialist revolution and of the transfer of the means of production into the hands of the people is radically different from the peaceful "growing" of capitalism into socialism which is preached by the reformists. The transition from capitalism to socialism in any form (peaceful or non-peaceful) means a transfer of state power into the hands of the workers and peasants, the transformation of the basic means of production into social property. This revolutionary change is directed toward replacement of a capitalist economy with a socialist one, toward liquidation of exploitation of man by man, toward participation of the members of society in useful labor, toward radical reconstruction of the whole social production in the interests of the laboring masses.

Substantiating the draft program of the Socialist Party of Austria, B. Kautsky especially emphasized the hostile attitude of the "democratic socialists" toward the Soviet socialist regime and his respectful attitude toward capitalism. "We are

fighting on two fronts — he said at the party congress — against capitalism with democratic means and against 'dictatorship' (this is his label for the socialist regime in the USSR and the people's democracies) — with revolutionary means." No astonishment that the bourgeois press highly praised the new draft program of the Austrian socialists, underscoring the fact that it "sweeps away Marx and radicals," and "throws out ideological ballast," meaning the leftovers of Marxist phraseology. On good grounds then the bourgeois people's party of Austria declared that the socialists included in their draft program points on which their party insisted "from the moment of its emergence." The Pope of Rome also spoke very approvingly of the "new" position of the Austrian socialists in the question of religion. This leaves no doubt as to the real essence of the new program of the Austrian socialists, of its antirevolutionary and antisocialist nature. In vain the reformists console themselves with the hope that they will succeed — as the authors of this draft program declare — in turning the peoples of the socialist countries to the road of capitalism, in luring the laboring masses of all countries under the deceptive banner of "democratic socialism" and in this way in saving the bourgeois order.

The historical successes of the Soviet Union and other socialist countries are of world-wide significance and convincingly show the great vitality of socialism based on scientific principles. The ideas of Marxism-Leninism, throwing light for all mankind on the road to tomorrow, to communism, are increasing their force of attraction with each passing day.

We read in the Peace Manifesto, approved by the Conference of the Representatives of the Communist and Workers' Parties: "The aim of the Communists is building a society in which the general welfare, the prosperity of all peoples and permanent peace among the nations will be assured." This dream of many generations is being turned into a reality in the USSR, in all countries of the world socialist system. The whole of mankind will come to communism, removing all obstacles on the way to this cherished goal.

ERLIKH: Cotton (Continued From Page 26)

the development of collective farm production, expanded reproduction of socialist production relations in the Soviet villages, an increase of labor productivity and a further rise in the cultural level of those occupied in agriculture.

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The economic problems of developing a system of machines in agriculture require attention on the part of the planning and agricultural organs as well as of the designing bureaus of the machine building industries. We consider the preparation of a broad perspective plan for the introduction of complex mechanization in cotton growing as a task of great importance, embracing the sum total of the problems involved in raising the level of agriculture, designing, experimental construction and mass production of all necessary agricultural machines. This plan should anticipate the consecutive realization of measures for the sharp reduction of labor expenditures and for the increase in labor productivity in cotton growing, increasing the power supply per worker and overcoming the seasonal character of labor expenditures. It should remove the observed disproportion in the existing system of machines. This plan should at the same time foresee the solution of the problem of how to utilize in Uzbekistan's economy the large amount of labor power which will be freed as a result of the complex mechanization of agriculture.

A. Pashkov:

The Structure of a Course in Political Economy

In the system of higher education in the USSR the teaching of political economy is playing an important role. Political economy is a component and most important part of Marxism-Leninism. Just as the case with the courses "Dialectical and Historical Materialism" and the "History of the Communist Party of the Soviet Union," political economy is studied in all the institutions of higher learning, independently of the type of specialists prepared there, while in the institutes of economics, the departments of economics in universities and the economic technicums, it is one of the leading disciplines.

To enhance the qualifications of teachers of this science not only is the further theoretical elaboration of problems of political economy very important, but also the generalization and critical analysis of experience with teaching methods.

It is 25 years since our institutions of higher learning started to teach political economy in the broad sense of the word. As we know, up to the '30s only the political economy of capitalism was studied and only some problems of socialism were included in order to compare the economic categories of capitalism and socialism. Along with the political economy of capitalism in the Soviet institutions of higher learning the course "The Economic Policy of the USSR" was also taught.

The transition to teaching political economy in its broad sense beginning with primitive society and ending with socialism was an important event. It reflected the achievement of working out the political economy of socialism — a completely new section of the course on political economy, developed in the course of the experience of building socialism in the USSR.

During the period that passed, considerable successes were achieved in the teaching of political economy. They are found first of all in the results of generalizing the practice of building socialism, in disclosing and understanding the economic laws of socialism and in the theoretical substantiation of the principles and methods for the management of the socialist economy. At the same time there are not a few defects in the teaching of this science, and much still remains incompletely worked out.

Marxist-Leninist political economy is both a theoretical and historical science. Characteristic of it are the so-called logical and historical methods of investigation and exposition. The inner relation, unity and distinction between these methods as specific forms of the use of the method of dialectical materialism in political economy was revealed in the works of the founders of scientific communism.

When evaluating the status of the scientific development and teaching of various parts of the course in political economy, we should admit that the least developed is the section on pre-capitalist methods of production.

Marx, Engels and Lenin profoundly characterized the pre-capitalist formations, contrasting them to the capitalist methods of production.

During the last decade a great amount of specific historical material was published on the economic life of pre-capitalist societies; this material demands theoretical comprehension. At practically no work is being done in this field; the political-economic study of pre-capitalist formations does not attract the due attention of the economists. Yet the study of pre-capitalist formations has marked significance, especially at present, in the period of disintegration of the colonial system of imperialism, when more and more nations which had retained considerable remnants of the pre-capitalist methods of production are throwing off the colonial yoke and are starting to travel the road of independent political and economic development.

In the section on pre-capitalist methods of production one can see the imprint of the recently prevailing "Europe-centrism," i.e., the study of political economy using almost exclusively the specific historical material of the Western countries and ignoring the very rich historical past of China, India and other Eastern countries, whose peoples have made an enormous contribution to the development of world culture. This serious defect in teaching, having the significance of principle, has begun to be overcome in recent years. In order to liquidate it completely it is necessary to develop the scientific study of the economic system of the Eastern countries from ancient times.

The presentation of this section still is mostly descriptive. The economic laws of pre-capitalist formations still are not formulated, and in the practice of teaching only one basic economic law of each pre-capitalist method of production is discussed. As a matter of fact, however, the pre-capitalist formations developed according to certain economic laws which should be revealed and formulated on the basis of the classical theoretical theses of scientific communism and the analysis of the vast accumulated concrete historical material on the economics of pre-capitalist societies.

The structure of the part of the course in political economy devoted to the study of the capitalist economic order is determined by the content and method of the great teachings of Marx, Engels and Lenin on capitalism. The political economy of capitalism is the most completely and profoundly worked-out part of Marxist-Leninist political economy.

The structure of the section on capitalism basically corresponds to the structure of Marx's "Capital" and Lenin's "Imperialism: the Highest Stage of Capitalism." At the same time there are in the programs some deviations from the sequence in which the economic categories and laws are explained in "Capital." What is the reason for these deviations and are they justified?

In "Capital" Marx uses the logical and historical methods of exposition which are closely connected with the logical and historical methods of investigating the capitalist method of production. Because of its method, the political economy founded by Marx is political economy in the broad sense of the word: the capitalist mode of production is considered by him to be the result of the preceding development of social forms of production, an historically transient social order after which a higher and more perfect socialist order emerges, followed by the communist form of production and distribution. As for its content, "Capital" is political economy in the narrow sense of the term, for here the direct objects of investigation are the production relations in bourgeois society and the economic laws of capitalism.

The teaching of political economy in the broad sense of the term cannot avoid introducing certain changes in the sequence of explanation followed in "Capital." By using the logical method in investigation and presentation, Marx examined capitalist production relations in their most developed form, and in the chapters and paragraphs devoted to the genesis of these relations (the forms of value, merchant capital, money-capital for credit, ground-rent, etc.,) showed the process of their origin and development before the epoch of capitalism. The study of pre-capitalist methods of production and the genesis of capitalist production relations in the course in political economy makes it possible and necessary to deviate from the sequence of presentation in "Capital." This is exactly what is done in the programs for the course in political economy in respect to various problems (the development of price forms which occurred in conformity with the process of development of production and exchange; the origin and development of merchant capital before the epoch of capitalism; the genesis of userers' capital, etc.).

Marx discussed the question of the so-called primitive accumulation of capital in Vol. I, Chapter 24 of "Capital" in connection with the analysis of the historical tendency of accumulation. But primitive accumulation occurred even in the frame of feudal society during the period of the decay of the feudal system. It was, as Marx indicated, the pre-history of contemporary capitalism. It is quite natural therefore to discuss the primitive accumulation of capital under the title "The Feudal Method of

Production" in the programs of the course in political economy. Such deviations from the sequence of presentation followed by Marx are quite justified theoretically and methodically.

But it is another matter to deviate from the sequence followed in "Capital" in presenting material on the theory of surplus value. In "Capital" the discussion of the essence of surplus value comes before the analysis of the three stages of the development of capitalism in industry. In programs which existed until very recently and in the textbook on political economy these stages of capitalist development are discussed before the analysis of the essence of surplus value. This deviation was motivated by considerations of a theoretical and methodical character. The theoretical considerations arose from the demand that the general characteristics of the productive forces of a given society on which the production relations are based should be discussed in the course in political economy before discussion of the production relations of each separate formation. The theoretical considerations were the following: For a person studying political economy for the first time it is much easier to proceed from the simple and specific to the more complex and abstract than the other way around — from the complex and abstract to the simple and specific. It would be easier to understand surplus value, the basis of the production relations of bourgeois society, if it were studied after learning about specific capitalist economic forms.

Many teachers objected to the deviations from "Capital" in the sequence of study of surplus value and of the three stages of development of capitalism in industry, as was the case in the two previous editions of the textbook and in the old programs for the course in political economy. They stressed that Marx examined the three stages of the development of capitalism in industry as consecutive steps in the development of the production of surplus value. Studying capitalist simple cooperation, manufacture and the factory before explaining the essence of surplus value inevitably lowers the theoretical level of the study of the stages of capitalist development in industry. One has to accept these considerations. The new programs for the course in political economy approved by the USSR Ministry of Higher Education restore the sequence of studying these problems to the scheme in Vol. I of "Capital." This does not eliminate the need for a general short elucidation of the productive forces of advanced capitalism and of the capitalist method of production before discussing the law of surplus value. A certain deviation from the scheme of "Capital" is also allowed in the textbook on political economy on the subject of "Capitalist Reproduction." Marx discussed this in Vol. II of "Capital," devoted to the analysis of the process of circulation of capital, while in the programs and in the textbook it is at the end of the section on pre-monopoly capitalism, before the last topic of that section, "Economic Crises." This shift is expedient theoretical and methodically. In teaching political economy the topic "Capitalist Reproduction" is presented in a broader way than in Vol. II of "Capital," namely not only from the aspect of exchange, but capitalist reproduction as a whole, i.e., as in Vols. II and III of "Capital." This makes it necessary to discuss this topic after the analysis of all the categories and economic laws of capitalism, because capitalist reproduction is the process of capitalist production considered as a continuous, constantly repeating process. It is also expedient that this topic be moved nearer the last topic of this section, "Economic Crises," where one of the most important traits of capitalist reproduction is discussed.

It is debatable if the problem of national income should be treated separately, and if so whether it should be discussed before the topic "Reproduction" or after it. For a long time the problem of national income, its reproduction, distribution, redistribution and use did not occupy a place in the course in political economy corresponding to its significance in real life. Insofar as the treatment of national income as a separate topic has the purpose of directing attention to this important problem, it is justified. But separating this problem into an independent topic and placing it before "Reproduction" was opposed by many economists, who held that one cannot understand the essence of national income and the laws of its reproduction and distribution without first discussing the essence of reproduction. They cite the works of Lenin on this problem during the '90s.

In our opinion there are certain good points in the reasoning of these economists, but to agree with them completely is hardly possible. Certainly it is true that when explaining the essence of national income and the laws of its distribution one has to digress from the process of reproduction, but this does not mean that one must study the entire theory of reproduction before studying national income. It is also true that the essence of reproduction, considered from the viewpoint not only of Vol. II but also of Vol. III of "Capital," can be properly understood only on condition that students of political economy know what national income is, how it is formed, distributed and used. Correct understanding of the essence of national income is possible on the basis of the general characteristics of capitalist reproduction given by Marx in Vol. I of "Capital." This understanding is based on the general characteristics of the aggregate social product and its components, which can be stated at the outset of the topic "The National Income of Capitalist Society." These important initial parts of the theory of reproduction are sufficient for revealing the essence of national income and the laws of its production, distribution and use. Thus, from the methodological as well as from the purely methodical points of view the treatment of national income as a separate theme and studying it before the topic "Reproduction" should not bring serious objections.

In the new programs national income is discussed under the general theme "Reproduction." But, in our opinion, this does not completely solve the problem. The order of study of national income which was established in recent years, i.e., treating it as a separate theme and studying it immediately before the topic "Reproduction" is quite justified. Each of these variants has its advantages and defects, and one cannot consider either to be the absolutely and exclusively correct solution of the problem. We believe it reasonable to include national income in the theme of reproduction in the short course and to treat it as an independent theme in the extensive course.

In the extensive course the topic "The State Budget" also should be separated, considering its enormous role under contemporary conditions in the distribution and redistribution of national income in the imperialist countries.

The subsection on imperialism is based on the structure of V. I. Lenin's work "Imperialism: the Highest Stage of Capitalism," with consideration of the most important changes in the economic and political status of capitalism in the epoch of the general crisis.

Putting aside a number of other methodical problems which arise in the teaching of this section of Marxist-Leninist political economy, let us consider one feature. In the existing programs and in the textbook on political economy the section on the capitalist mode of production is divided into two subsections: "Pre-Monopoly Capitalism" and "Monopoly Capitalism — Imperialism." But this division does not quite accurately reflect the content of the course. In the subsection on pre-monopoly capitalism the most important features of capitalist production relations and economic laws are studied. These laws operate in the epoch of pre-monopoly capitalism as well as in the epoch of imperialism (the law of value, the law of surplus value, the law of capitalist accumulation, etc.). In the subsection on monopoly capitalism the discussion concerns those new phenomena, new laws, which are connected with the monopolist stage of capitalist development. On the basis of the present titles of the subsections in the course in capitalist political economy one could draw the erroneous conclusion that the categories and laws discussed in the first subsection operate only under conditions of pre-monopoly capitalism. But political economy students should learn that the specific economic laws of capitalism operating during the epoch of pre-monopoly capitalism continue to operate in the epoch of imperialism. But here categories appear and laws operate which were unknown under pre-monopoly capitalism (financial capital, the export of capital, the law of monopoly profit, etc.). Laws operating under pre-monopoly capitalism (for example, the law of uneven development of capitalism) acquire special power and meaning.

Therefore it would be expedient to define the titles of the subsections of capitalist political economy more exactly — for instance, as follows: A) The Capitalist Economic System. Pre-Monopoly Capitalism. B) Monopoly Capitalism — Imperialism.

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The structure of the section of the course in political economy on the socialist method of production is the result of collective work by Soviet economists. The economics discussion in 1951 was especially significant. Compared with the situation that existed before this discussion, undoubtedly a considerable step ahead was made. But it is quite clear that the structure of the course in political economy is still far from perfect. This is not strange: socialist political economy was established recently, and its formulation still is in process.

We justly admire the iron logic of the structure of "Capital," in which every category, every law stands in its place so firmly that none could be shifted without infringing the logic of the entire construction of "Capital." But one cannot forget that the logic of the structure of "Capital" did not work out well for Marx all at once; he changed it a number of times and refined the plan of his great work until he found the solution which was embodied in a work of genius.

There is still much empiricism in our approach to the structure of the political economy of socialism. The problem itself attracts the attention of economists only occasionally and is discussed infrequently. A major special methodological work by economists on this important and complex problem is necessary. Not attempting to any degree a complete interpretation of this problem, let us concentrate only on some of the problems which arise in the teaching of political economy.

Marxist-Leninist political economy is a science with one object only, one method of investigation and one method of explanation of its different parts. But this does not justify drawing the conclusion that, for instance, the structure of the course in the political economy of socialism must strictly echo the structure of "Capital." Owing to the different nature in principle of the production relations and economic laws of socialism one cannot consider the commodity as the economic cell of socialist society. It would be incorrect in analogy with "Capital" to start the discussion of socialist political economy with the characteristics of the commodity category in socialist society. Similarly it would not be justifiable to divide the discussion of the political economy of socialism strictly into three parts: 1) the process of socialist production; 2) the process of exchange under socialism; and 3) the process of socialist production as a whole. Marx did this in his teaching on the capitalist method of production, dividing it among the volumes of "Capital." As important as the process of exchange of the social product is under socialism, it is not necessary to place it in a special section of socialist political economy, in particular because the theme "Socialist Reproduction" is elucidated not only in respect to exchange, as it is in Vol. II of "Capital" in relation to capitalist reproduction, but in a broader way, i.e., also in the way that Marx explained reproduction in Vol. III of "Capital." One has to admit that in the existing courses in political economy the problems of exchange under socialism are not presented broadly and completely enough, and this defect should be eliminated. Probably not one, but several topics are needed for a more complete and profound explanation of the problems of exchange under socialism. But here is something else: in a course in the political economy of socialism it is not correct to copy the structure of "Capital" purely mechanically.

Certainly, in the structure of the political economy of socialism the general methodological condition of historical materialism should be observed — to show the decisive role of production in relation to exchange, distribution and use; the problems of socialist production must be developed before the problems of distribution and exchange. But this principle also should not be made absolute, because, for instance, the relations of production and distribution are parts of the whole, different sides of one and the same social order of production, and it is intolerable to put them on different "shelves" of the course in political economy, as is done by the bourgeois economists.

The socialist system of economy does not spring spontaneously from the bosom of bourgeois society and is not developing in it. It is built in the process of the planned activity of the workers, under the leadership of the Communist Party. Therefore it is proper to divide the course in political economy into two parts, two subsections: "The Period of Transition from Capitalism to Socialism" and "The Socialist Economic System."

In the first subsection is a discussion of the process of the revolutionary reconstruction of capitalist society into a socialist one — the liquidation of capitalist economic forms and the creation of a socialist economic order, socialist industrialization, socialist reconstruction of agriculture — in short, the process of creating a socialist economy. This subsection describes the founding of the economic laws of socialism along with the formation of socialist production relations, the gradual extension of the sphere of operation of these laws and intensification of their operation in connection with the successes in building of socialism. In the second subsection an analysis of the production relations of socialist society and of the economic laws of socialism is given.

Especially the first subsection of the political economy of socialism needs a certain elaboration. Up to recent times it was mostly descriptive and to a considerable degree paralleled the course of economic history of our country during the Soviet period. The theoretical, politico-economic analysis of processes in many cases was replaced by a description of the economic policy of the Communist Party and the Soviet state. During recent years this part of the course undoubtedly was improved. But still, even now, the logical method of presentation, without which there cannot be a genuine political economy, is not adequately used for the explanation of the transition period.

In the course in political economy, in distinction from the history of the national economy, there should be revealed not the specific process of founding the socialist system in one or another country, but the basic laws of this process, its principal features and important stages. Certainly, these principal features, the laws of the process of revolutionary reconstruction of the economics of capitalist society into socialist economics, can be revealed and shown only on the basis of the analysis of specific historical material and by considering the experience of building socialism. In this subsection of the course in the political economy of socialism, just as in the subsection which analyzes the socialist economic system, it is necessary to make wide use of the specific historical material. But this material must play an auxiliary role, i.e., serve as an historical illustration to the already-formulated theoretical theses. In the subsection on the economy of the transition period the task of combining the logical and historical methods of investigation is especially complicated.

To raise the theoretical level of the explanation of the economic of the transition period and to give it an analytical, politico-economic character, it is necessary, in our opinion, first of all to analyze the basic features of the system of production relations under socialism, the essence and operation of the economic laws of socialism and the economic role of a socialist country. The basic features of the system of production relations under socialism are: 1) the social form of ownership of the means of production; 2) the comradely cooperation and mutual help of peoples free from exploitation, as the form specific for socialism of people's joint activity in production of material wealth; 3) the socialist division of labor and exchange of activities; 4) the socialist form of distribution of the products of labor.

At present in the course in political economy these problems are discussed incoherently and only in the second section ("The Socialist Economic System"). To start the presentation of the political economy of socialism with an analysis of the above basic features of the production relations of socialism means to arm the students at once with an understanding of where and to what economic order society is proceeding from capitalism. If the students grasp the principal features, the essence, of production relations under socialism, their principal distinction from the basic features and traits of capitalism, they can then understand more correctly and more profoundly why the socialist method of production cannot originate and develop in the bosom of capitalism, why a transition period from capitalism to socialism is necessary, why the transition to socialism is impossible without the dictatorship of the proletariat.

The political economy of socialism emerged in the struggle with the widespread, erroneous idea that under socialism economic laws cannot exist, supposedly because the presence of a conscious aim in managing the economy contradicts the very idea of objective conformity with a law of economic life. The groundlessness of this idealistic contraposition of the aim of society and objective law was shown long ago, but traces of it

still linger in the subjective interpretation of the laws of socialism by some Soviet economists. The enemies of socialism still rely on it in their absurd assertions about the fortuity of the October Revolution, about the arbitrariness of the economic policy of the countries of the socialist camp, about the artificiality of the entire direction of the development of their economies, etc. The economics of the transition period is studied at present without a preliminary understanding of the peculiar character of the operation of the laws of socialism and the peculiar economuc role of the socialist state. Yet the study of these problems is absolutely indispensable for a profound politico-economic understanding of the great processes of economic reconstruction which occur during the period of transition from capitalism to socialism. It goes without saying that the detailed consideration of the economic laws of socialism and of their operation, the detailed consideration of the economic functions of the socialist state, belong to the section "The Socialist Economic System." But this change in the structure of the course is not all that is necessary.

As it is known, in "Capital" Marx based the theoretical analysis of the capitalist method of production first of all and mainly on the example of England, then the most developed capitalist country. But England was not the only capitalist country then. On the basis of the rich concrete historical material of England Marx revealed in "Capital" the general laws of capitalism which are common to all the capitalist countries.

The Soviet Union was the first to enter the road of building socialism and was the first to build a socialist society. For the USSR the period of transition from capitalism to socialism is a stage in historical development which is already over. The process of completing the building of socialism and the gradual passing to the higher phase of communist society is taking place in our country. Therefore it is quite natural that the working out of the political economy of socialism is based on the rich concrete historical material of the development of the USSR. This applies to both parts of the political economy of socialism — to the transition period and to the socialist system of economy.

At the same time the working out of the political economy of socialism demands a profound study of the experience in building socialism, the practice of socialist economic management in other countries of the world socialist system as well — in the European and Asian people's democracies. The subsection on the economics of the transition period should present the general traits of the construction of socialism common to all countries undergoing the transition from capitalism to socialism, as well as the peculiarities of this construction in some countries or groups of countries. Common for all countries are the basic, radical features — the establishment of the dictatorship of proletariat, the seizure of the commanding positions in the economy, the steady realization of the policy of union of the working class with the peasantry, the leading role of the Communist and Workers' Parties in building socialism and communism, the socialist industrialization of the country and cooperation of the enterprises of small-scale producers (the peasant and artisans), the planned development of the economy, the observance of the principle of democratic centralism in the management of the economy, etc. The concrete forms of realization of these principal features may vary in different countries because of the concrete historical peculiarities of the development of each given country. V. I. Lenin pointed this out; it was stressed by the 20th Congress of the Communist Party of the USSR.

Thanks to the victory of socialism in the USSR and the formation of the world system of socialist economics, conditions for the victory of socialism in other countries are now more favorable. The 20th Congress of the Communist Party of the USSR pointed out that the forms of transition to socialism in different countries will become more diverse and that this transition will not necessarily always be connected with civil war.

It follows from this that the period of transition from capitalism to socialism cannot be presented in the same way as in the recent past, i.e., exclusively on the basis of the experience of building socialism in the USSR, placing discussion of the economies of the people's democracies in a separate section. In future this part of the course in political economy should be based on the experience of socialist construction in our country, but at the same time it is necessary to present a theoretical analysis of the basic problems of the transition period in general, and not in the USSR alone; to show the basic features of the building of socialism common to all countries along with the peculiar forms of the transition from capitalism to socialism in different countries or groups of countries.

The peculiarities of building socialism in different countries arise not only from the differences in the economic and political systems in these countries before the beginning of socialist reconstruction, from the difference in the level of development of productive forces, culture, etc., but also from the radical change in the international situation in which the building of socialism is being effected in various countries. It is one thing when we speak about the building of socialism in the USSR — the first and for a long time the only country of the dictatorship of proletariat, which was surrounded by the capitalist countries. It is another when we speak of the present building of socialism in the people's democracies, when the conditions of building socialism have been radically changed: socialism having won in the USSR, the world system of socialism having been created, and a mighty and vigorous camp of socialist countries now existing.

The study of the economics of the transition period must also include a scientific analysis of the ways and forms of building socialism in the countries which did not pass through the stage of capitalist development and are advancing toward socialism from a more backward, pre-capitalist form of economy.

It is clear that the task of creating a general, strictly theoretical section of the course in political economy, "Economics of the Transition Period," excludes the necessity or possibility of separating the economies of the people's democracies into an independent part of the course. Several years ago such a division had some justification, for then the course in the political economy of socialism was being formulated, the people's democracies were passing through the early stages of the transition period and the theoretical analysis of the processes of socialist reorganization in those countries was still far from adequate. Now the situation has sharply changed, and many Soviet economists consider that retaining two interpretations of the transition periods, one based on the experience of the USSR and another on the experience of the people's democracies, in the course in political economy is unjustifiable.

Those economists who insist on retaining in the course in the political economy of socialism the structure that existed up to the recent period justify this by the necessity of paying considerable attention to the economics of the people's democracies. But the argument is not about the necessity of continuing to elaborate on the economics of the people's democracies, but on how and where to do it: only under special separate topics or all through the course in political economy of socialism.

We believe that the second way is the right one. Exactly in this way a really theoretical, political-economic investigation of the development of the people's democracies could be achieved, instead of a specific historical, economic and geographical examination, as is primarily the case in the present study of the economics of these countries under separate topics, being a kind of mechanical "pendant" to the course of political economy. Such a rearrangement of the structure of the course would result not in belittling but, just the contrary, in considerably reinforcing the elucidation of the economic problems of the people's democracies in the course in political economy, because these problems would be included in all the topics under the political economy of socialism.

In the programs of the course in political economy there are no special topics dedicated to the economics of the people's democracies. The questions of socialist nationalization of the means of production, of the economic structure, of industrialization, of socialist reorganization of agriculture and other questions of economics of the people's democracies are included in the corresponding themes of the subsection "The Period of Transition from Capitalism to Socialism." Such a rearrangement of the structure is quite useful. But this is not enough. The economic problems of the people's democracies should be widely explained in the subsection "The Socialist Economic System."

During the period of transition from capitalism to socialism no special economic laws peculiar only to this period operate. During this period the operation of the law of conformity of production relations with the character and level of development of productive forces is revealed especially clearly. The socialist

ationalization of capitalist enterprises and the cooperatization f the peasants' holdings — this is the process of bringing pro- uction relations into conformity with the developed productive orces of contemporary society. In the transition period the eco- omic laws of capitalism lose their power; new laws, the eco- omic laws of socialism, emerge and expand the sphere and ower of their operation.

The logical method of investigation in political economy de- ands that the new socialist production relations and the new conomic laws expressing their essence should be studied in the ost mature, developed form, i.e., under conditions of estab- shed socialist society. This means that these problems should e dealt with in the subsection "The Socialist Economic System." ut it does not follow from this that it is unnecessary in the ourse of political economy to study the genesis of socialist roduction relations, the process of formation of the socialist conomic laws and the gradual development of the principles nd methods of socialist economic management. Such a disre- ard for the historical process of development of economic ategories and laws of socialism would bring a one-sided, pure- formalistic understanding of the logical method of political conomy. As it is known, in "Capital" the logical method of vestigation and explanation is closely interwoven with the his- rical method; the theoretical analysis of the developed pro- ction relations and economic laws of capitalism is accompa- ed by the analysis of their origin.

A similar approach should be used for socialist political econ- ny: after a theoretical analysis of socialist production rela- ons and economic laws and the principles and methods of so- alist economic management, based on contemporary concrete aterial from our country, it is of value to undertake an his- rical digression, to trace the formation and development of ese relations, economic laws, principles and methods of eco- mic management during the period of transition from capi- ism to socialism in the USSR and in the people's democracies. is also of value to study certain separate stages of develop- nt of socialist society. Knowledge of the past, of the history development of socialist managerial methods, has great sig- icance for the practical workers in the field of socialist econ- y in the USSR and in the people's democracies as well as for nore profound theoretical understanding of the economic laws socialism and the general principles and methods of social- economic management. In the extensive courses in political nomy the discussion of the process of formation and develop- nt of the operation of such laws as the basic economic law of ialism, the law of planned development of the national econ- y, the law of distribution according to the amount of labor such methods of socialist economic management as demo- tic centralism in the management of socialist industry and struction, the self-support of enterprises, etc., could be arated into independent topics.

he subsection "The Socialist Economic System" begins with topic "The Material Production Base of Socialism." Many nomists question the necessity for this topic. Others con- r that it is needed, but that a proper place must be found for the structure of the course. In our opinion, this topic uld be retained, but it is necessary to define more exactly its tents and place in the course. This topic should be devoted he analysis of the productive forces of socialist society, and narily to the principal productive power — the workers of socialist society, the cadres.

it it should be shown how the workers of socialist society armed in their struggle with nature; with what instruments bor they produce material wealth. At this point the tech- gy of socialist society should be characterized, its ten- ies and methods of development. Such general problems of alist production as the social division of labor, specializa- in production, cooperation among industrial enterprises, degree of concentration of production under socialism and distribution of productive forces should be explained. The ent very indefinite designation of the topic should be changed The Productive Forces of Socialist Society." This topic ld be studied not before the "Basic Economic Law of So- sm" but after it. In this way it would be the direct develop- t and concretization of the thesis of the continuous growth perfection of socialist production on the basis of the highest technology, as stated in the formulation of the basic law of socialism.

The independent topic "Socialist Ownership of the Means of Production" also is questioned by some economists. They refer to the fact that in "Capital" there is no special chapter nor even a separate paragraph on bourgeois ownership: the latter is discussed in all three volumes of "Capital." Of course this is true. This is explained by the role played by ownership, as the most important element in people's production relations. Marx wrote that to define bourgeois ownership means to describe all the social relations in the field of bourgeois production. In the three volumes of "Capital" the essence of bourgeois ownership is consistently revealed in all its diversity of concrete forms.

In our opinion, this principle is also applicable for the analysis of social ownership in the course in the political economy of socialism.

The concentration of the analysis of social ownership in one topic to a considerable degree makes other topics of the course lifeless. Without a proper extended discussion of social ownership it is impossible to understand thoroughly any economic category, any economic law of socialism. The analysis of social ownership should stand out through the entire political economy of socialism, the same as the analysis of bourgeois ownership stands out in all the three volumes of Marx's "Capital." As was said above, a very general analysis of the social ownership of the means of production and of the manufactured product under socialism should be given in the beginning of the section dealing with the political economy of socialism. A more detailed and specific analysis of social ownership should be given under the topic "The Basic Economic Law of Socialism" because social ownership is the special, specific method of joining the direct producers with the means of production, which determines all the other fundamental features of production relations under socialism. A detailed analysis of the ownership of collective farms should be included in the topic devoted to collective production.

The next topic of the subsection of the course is "The Basic Economic Law of Socialism." This law characterizes the most important indication, the basic aspect, the fundamental feature of production relations in a socialist society. Therefore the detailed consideration of the system of production relations, the economic laws of socialism, should begin with an anlysis of this law. The section "The Socialist Economic System" should therefore begin with the topic "The Basic Economic Law of Socialism."

Political economy teachers are not satisfied with the textbook's treatment of the topic of social labor under socialism. It is justly pointed out that under this topic many important problems are united which require independent consideration: the law of steady growth of labor productivity, the law of distribution according to the amount of labor contributed, etc. In the new programs for the course in political economy, the general characteristics of social labor under socialism and the law of the steady growth of labor productivity on the one hand, and the law of distribution according to the amount of labor contributed and wages under socialism, on the other hand, are separated into independent topics in the course. This undoubtedly will improve the presentation of the given problems.

Many economists object to the inclusion in the course in political economy of the special topic, "The Socialist System of Agriculture." They argue that the topics of political economy should reflect the principal problems and not those of the branches of the economy; and if it is necessary to separate out the problems of agriculture it would suffice to limit them to one problem — differential rent under socialism, as Marx limited himself to an analysis of capitalist land-rent in Vol. III of "Capital." One cannot agree with such reasoning. In our opinion, it would be useful to change the title and considerably narrow the scope of this topic. Only the collective order of production should be explained and excessive descriptive material should be eliminated. An analysis should be presented here of those peculiarities which are conditioned by the collective form of socialist ownership — the peculiarities of enterprise management, of planning, and of the operation of the law of value. An analysis of the category "labor-day," of differential rent and other specific categories

inherent in collective agriculture should also be presented. One should not forget that in the course in the political economy of capitalism not only is land-rent studied, but also the totality of production relations and the laws of development of capitalism in agriculture.

The economic laws of socialism are the laws of development of socialist society and its gradual advance toward complete communism. Therefore the inclusion in the course of the special topic "The Gradual Transition from Socialism to Communism" does not exclude the need of showing, when discussing each separate economic law of socialism, the significance of using the operation of the given law for the further development of the socialist economy, the completion of building a socialist society and the gradual transition to communism.

The spreading of socialism beyond the borders of one country and its transformation into a world system requires the inclusion in the course in political economy of a new closing topic on the world system of socialism. In it the basic distinctions between the world socialist system and the world capitalist system should be described, as well as the new type of international relations in the socialist camp. The principle of coexistence of countries with different social systems should be substantiated, and the problems of peaceful competition between socialism and capitalism and the bases for peaceful relations among states throughout the world should be considered.

Bronislaw Minc:*

Price and Value in A Socialist Economy

Price theory in socialist economics must generalize, on the basis of Marxist-Leninist economic teachings, practical experience in determining prices, and it should promote the further perfection of the price system. The many years' experience of the Soviet Union and other socialist countries shows that the laws which determine the prices of consumers goods and means of production are not the same.

Consumers goods' prices are determined by the consideration of demand and supply. If prices are established on an excessively low level, then a shortage of goods arises, accompanied by speculation. If prices are established on a higher level, then part of the goods or sometimes all of them remain unsold. It follows that the objective necessity is to establish prices of consumers' goods on a level which considers supply and demand. This necessity is related to another one, a more general necessity: the establishment of prices on the total mass of goods on the market at a given period based upon consideration of the total sum of money income and changes in the reserves of cash and savings of the population that are deposited in the credit institutions.

The socialist state forms the monetary incomes of the population through planning and determines the volume of production and import of various goods for consumption. Thus, it also actively influences prices, which under socialism cease to be the result of the spontaneous play of supply and demand. At the same time the correspondence between supply and demand is achieved with the help of prices established by plan. From this, one can see how one-sided and wrong the definition of the essence of price is on the consumers' goods in the socialist economy as the "balance price." By such a definition the distinction between price in socialist economy and capitalist economy is erased.

Prices on the means of production are formed quite differently. These prices are not bound by demand and supply because in this case the market is absent in the direct sense of the term: the main mass of the means of production is distributed by orders or on the basis of the plan for material-technical supply. Prices on the means of production, which circulate inside the socialist sector of production, are formed on the basis of cost plus some small profit. But this is only the general principle. In some periods the prices on certain means of production may be lower than the actual cost, and in such a case the losses of the enterprise are covered through a state subvention.

One of the causes of losses on certain means of production is that in some branches of production the growth of wages outruns the productivity of labor. As the result, expenditures on production are increased by a sum sometimes larger than the originally planned profit. When, thanks to raising prices on the means of production, profitableness is restored, a new increase of wages in certain branches of industry can result anew in losses on some means of production. Such a system of pricing the means of production (on the basis of cost) exists in the Soviet Union and in all socialist countries.

Experience shows that although there is a connection between prices on consumption goods and prices on the means of production, under conditions of socialist economics the interdependence of these prices is relative. For instance, sometimes the change in prices of the means of production is realized without a simultaneous change in the established prices of consumers' goods and sometimes, the other way around, after a change in prices of consumers' goods the prices of the means of production remain unchanged. The change in prices of the means of production undoubtedly affects the dynamics of prices of consumption goods, but this connection is not immediate. Not all, but only sufficiently large changes in the prices of the means of production involve a change in the prices of consumers' goods. The same applies to the influence of the change in the prices of consumers' goods on the prices of the means of production. Only such an increase of prices of consumers' goods which requires raising wages and thereby leads to losses on the means of production results in a price increase of the latter.

The question is: is the system of pricing described above really the reflection of objective laws of socialist society? If so, have these laws an absolute, i.e., constantly operating, unchangeable character or are they liable to changes? Is the method of pricing used at present something unchangeable or may it have to undergo changes? Finally, the question should be considered: does objective value exist in a socialist economy; i.e., is there an objective basis around which prices on different products fluctuate?

The opinion that the method of pricing in the socialist economy is something arbitrary, that it is not determined by objective necessity, contradicts reality. Facts indicate that the characteristic traits of pricing under socialism derive from socialist economic conditions. The general level of prices of consumers' goods as well as the prices of given articles for consumption are objectively determined by the level of productivity of social labor, by the volume of social production and its structure, and also by the distribution of the national income. All these factors as a whole determine the conditions of the market and in particular the correlation between the total demand and total supply, and also between the demand on separate consumers' goods and their supply. The determination of prices of such consumers' goods in the socialist economy should be adjusted to these objective conditions.

The low level of prices of the means of production derives from objective economic conditions prevailing during the period of socialist industrialization.

In economic calculations based on cost the expenditures for the means of production and wages are always compared. If the prices of means of production are set at a high level, then, in principle, they reflect the expenditures on the labor embodied in commodities in a more complete way; while wages always reflect only a part of the living labor spent. With a high level of prices on means of production it may happen that the capital investments, allowing for an increase in the productivity of labor, may be less advantageous if the results are evaluated by cost, and more advantageous if they are evaluated by value. Because the cost does not reflect all the expenditures of social labor, the real effectiveness of new technique, as a rule, would be lowered if expressed in cost and not in value. This, in turn, may result in limiting the introduction of new technique. But because it is impossible to calculate the value of products in working time, the calculation of the effectiveness of capital investments by value runs against insuperable difficulties. Therefore economic calculations have to be based on cost, in spite of the fact that such calculations do not reflect the total economy in living labor. As far as the prices of means of production set at a low level are considered in cost, the results of comparing the expenditures on means of production and on wages by cost are close to the re-

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lts of comparing all the expenditures of the labor embodied in mmodities with the expenditures of living labor. Thus the low vel of prices of means of production leads, in the technical-onomic calculations based on cost, to the selection of variants ich secure a higher productivity of social labor, rather than riants under which the prices of the means of production in-ade the total surplus-product. Consequently the system of low ices of means of production is favorable for technical progress. During the period of socialist industrialization when industrial oduction is developing at a rapid tempo, the level of expendi-es necessary for manufacturing the means of production is atively high, while the level of wages is relatively low. If the ces of means of production were established on a level corre-onding to the level of prices on consumers goods, then the re-cement of living labor by the labor embodied in commodities uld find obstacles in the form of the seeming advantage of lizing living labor.

Someone may take exception and say that under conditions of cialism, when the direction of capital investments is deter-ned by the state, the latter can overcome all the difficulties sulting from the high prices of the means of production. But high prices still would create difficulties in realizing the ns of investments. Selection of investment projects highly pendent on technique would contradict the economic calcula-ns based on high prices of the means of production. Under h conditions some enterprises inevitably would try to make isions economically unsound, hindering the progress of tech-ogical development. This would especially affect the choice echnological methods.

The possibility of establishing low prices on the means of duction is secured under socialism by centralization of a siderable part of accumulation in the hands of the state and centralized planning of investments. That is why it is not essary to retain at the disposal of the enterprise the entire h of the value produced there: it suffices to allow it to retain a sum corresponding to the expenditures for production and rt of the profit. This profit should be used by the enterprise replenishment of circulating capital, for small-scale capital ks and for building the so-called fund of the enterprise, de-ed primarily for meeting the needs of the collective body of enterprise.

t the same time it should be noted that the system of low es on the means of production also has some negative as-s. In particular, the relatively low prices on the means of duction are not favorable for the careful handling of them. difficult to establish the actual proportions of the social duct and national income and of their distribution. But all e defects retreat to second place when it is necessary to blish low prices on the means of production for accelerating development of the economy and securing technical progress. e establishment of a low level of prices on the means of duction is therefore determined by the specific economic sit-n and by the tasks facing the national economy during the od of socialist industrialization: this is one of the tools for lerating economic development. But the economic situation able to change.

cialist industrialization, creating a mighty heavy industry, s to raising the productivity of social labor and to reducing es on the means of production. As a result of socialist in-rialization, the real wages of the working people are consid-ly increased. In this way the correlation between the expend-s of labor needed for manufacturing the means of produc-and real wages is changing. But one should not imagine that e are only two possibilities: to establish prices on the means oduction on a low level with a minimal profit, or on a high , more or less corresponding to the level of prices on con-rs' goods. There also exist intermediary possibilities. One ld not approach schematically the determination of the level ofit in relation to the expenses of production of the means oduction. This level depends on the specific economic con-ns of the given period and must be different for different s or groups of the means of production. Moreover, it cannot e same in different socialist countries.

our opinion, the level of profit in relation to the expenses oduction in any case should be more than 3-5%. This is ssary because such a percentage is too low and with such a level of profit it is impossible to avoid losses at a large number of enterprises and entire branches of the economy, especially in case wages are raised in some of them.

The increase of profit in prices on the means of production is designed to encourage more care in handling the means of production and must result in augmenting the resources remaining at the disposal of enterprises. This will strenghthen the operative independence of the enterprises, for it will become possible for them to carry out certain capital works by their own means.

It is not expedient to raise the prices of the means of production to the level of consumers' goods prices. Establishment of high level of prices on the means of production without an analysis of specific economic conditions may in the end result in selecting such projects of capital construction and such technological methods in which the share of living labor will be too high, and this would be followed by lowering the tempo of technical progress. This danger will be much more serious as the role of enterprises grows in selecting projects of capital construction and methods of technology; enterprises naturally will make their decisions considering the existing system of prices.

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Does objective law determining the point, the base around which prices fluctuate in the socialist economy?

As it is known, under pre-monopolist capitalism this law is the law of prices of production; under imperialism, when the profit of monopolistic combines surpasses the average profit, the point to which prices are attracted is no longer necessarily determined by the law of prices of production.

In a socialist economy a tendency is observed for prices at least to cover the expenses of production. But there is no law determining the distribution of the aggregate value of the surplus-product among the prices of various products. The practice of pricing in socialist countries shows the possibility of a considerable divergence in the amounts of accumulation contained in the prices of various products. One cannot, relying on this practice, determine the point around which the prices on various products must fluctuate. The presence of such a point presupposes the existence of competition between the enterprises in certain branches and of free interchange of means of production and labor force between enterprises and branches of production. In a socialist economy, the basis of which is social ownership the means of production and centralized planning, such conditions do not exist.

One could try to invent a unified formula for establishing prices in a socialist economy. But concrete economic conditions would inevitably lead to numerous considerable deviations from the price calculated in such a formula, and this would prove that it is not necessary at all to use any uniform formula. There is no doubt that a schematic, inflexible use of such a formula would be erroneous: it would mean refusal to consider specific economic conditions when determining prices.

In the economic literature a number of proposals were advanced for establishing a uniform formula of pricing in the socialist economy. Here are some of them:

1) To calculate the value of all products in hours of working-time, relying on obligatory norms of expenditure of labor per unit of product which were operating for a number of years. The authors of this proposal consider that the value of all products could be rather easily calculated using the rapidly operating electronic machines.

2) To base the prices on consumers' goods as well as on the means of production on their value. Such a proposal was made, in particular, by Academician S. G. Strumilin. In his opinion, the aggregate surplus-product should be distributed among various branches of production in proportion to the expenditures of living labor.

3) To establish prices of the means of production and consumers' goods alike on the basis of prices of production.

4) To found prices of the means of production and consumers' goods on the same basis — on expenses of production plus a part of the aggregate surplus-product, distributed in proportion to these expenses. The aggregate surplus-product, according to these proposals, has to be distributed among various branches of production in proportion to the share of the expenses of production of these branches in the aggregate expenses of production as a whole.

5) To create a system of prices based on uniform principles

for consumers' goods and means of production alike. Prices of means of production in such case should be determined by the market prices of consumers' goods.

As we see, the attempts to find a general formula of pricing are very diverse.

Let us examine the proposal for determining prices on the basis of calculating the value of products in working-time. The author of this proposal, E. Liberman, realizes that to calculate value in prices is an insoluble problem. He said: "If we remain in the framework of the categories of value, then actually it is impossible to get a correct expression of the expenditure of labor, for it is not known what percentage of the expenditure of labor should be added to the wages and whether it should be the same in all branches of production."* Comrade Liberman proposed to calculate value in working time. But under present conditions such a calculation may be not less, but even more doubtful than calculation with the help of value categories. The labor spent in different branches of production is qualitatively different. Besides, the amount of labor necessary for producing one or another product is constantly changing along with the change in its productivity. But even if it would be possible to calculate correctly the expenditure of working time, still it could not serve as a basis in pricing under conditions of production for marketing, because price must reflect the relations between demand and supply, etc.

According to another proposal, value, as the basis of pricing, should be calculated not in working-time, but with the help of prices. Aside from "inaccuracy" resulting from the calculation of value on the basis of prices, to accept this proposal would mean to return to the relations of simple commodity production, when the means of labor were poorly developed and prices were regulated directly by the law of value. Is it possible, under conditions of socialist economy, to return to a correlation between price and value determined by the operation of the law of value in its unmodified form in pre-capitalist time? No, it is not. Modification of the law of value into the law of prices of production is caused by two factors: the first, having a general character, is that the productive forces reached a high degree of development thanks to widely used instruments of labor; the other one, the specific factor, is in the essence of capitalist economy, the aim of which is to secure maximum of profit. But the specific reason for the modification of the law of value into the law of prices of production disappeared under the socialist order, while the general reason remained.

Suppose that prices of products are formed in conformity with their value. Then the shares of the aggregate value of the surplus-product in the prices of various products would be proportionate to the expenditures of living labor. Consequently the higher the expenditures of living labor and the higher the share of wages in the general cost of production, the higher (in corresponding proportion) would be the prices and the profit of enterprises. Under such a system of pricing, the value of basic funds utilized in manufacturing products would be ignored. This would result in slowing down technical progress and in the increase in the proportion of those products which require relatively higher expenditures of living labor. Such pricing would contradict the level of development of the productive forces achieved in the socialist society.

The third proposal — to build the prices on the basis of the prices of production — is an attempt to bring into the socialist economy the principle of pricing peculiar to capitalism of the period of free competition. The economists who advance this proposal forget that under conditions of socialist economy the value of the fixed and circulating funds cannot serve as a criterion for the distribution of the surplus product among the prices on various products. In the branches of production where raw material and semi-manufactured goods play a considerable role in the total cost of production, the level of profitableness could be much higher than, for instance, in the extractive industry. Consequently, the level of profitableness would not depend on actual efforts of the enterprise, but would be determined by the amount of its fixed and circulating funds. In a socialist economy only the actual efforts of the enterprise should serve as a decisive criterion for determing the level of its profitableness.

According to the fourth proposal, prices should be in proportion to the amount of expenditures on production. In other words, the higher the cost, the higher should be the price and profit. Such pricing, considering the amount of amortization, ignores the size of the fixed funds. If pricing depended on cost, some enterprises could see in this a stimulus for using more expensive raw-materials and other goods. The level of profitableness would not depend on the efforts actually applied by the enterprise; it would be determined to a considerable degree by the share of raw-material and semi-manufactured goods, etc., in the total sum of expenditures on the product.

The fifth proposal has in mind establishing prices on the means of production on the basis of considering prices for consumers' goods. One of the supporters of this method is Professor B. Bruss He writes that a uniform system of prices embracing means of production as well as goods for consumption "can appear only when it is based on market prices and when prices on products in other branches are built gradually in mutual interdependence.* Professor Bruss does not explain how the prices of the means of production should be based on the market prices of consumers' goods. But a part of the prices of consumers' goods is the cost of producing them, which is determined in turn by the prices of the instruments of production.

History knows a previous attempt to find the prices of the means of production on the basis of consumers' goods' prices. This attempt, made by the school of marginal utility, proved unavailing. It is doubtful if Professor Bruss and some other economists will now succeed in determining the prices of the means of production on the basis of the prices of consumers' goods. But let us suppose that they succeed in reaching what is inaccessible. Then the market fluctuations of the prices on consumers' goods and the very law of supply and demand would regulate the prices of the means of production, and consequently the manufacturing of means of production and socialist production as a whole. It is obvious that such a solution is unacceptable.

As we tried to show, there is no universal formula for determining prices under socialism. But for the analysis of the level of profitableness of production of various products and of various enterprises it is expedient to work out a formula which could facilitate such investigations and at the same time help in the calculation of prices.

The price of a product consists of two elements: the cost of production and the surplus product. As far as the cost of production is known, the problem of determining prices consists in finding the amount of surplus-product which has to enter in the composition of the price. Consequently, the task is to show in the formula of the analysis of prices what part of the aggregate surplus-product should be included in the composition of the price of a product.

In our opinion, the criterion for the distribution of the aggregate surplus-product in the formula for the analysis of prices should be the correlation between the fund of wages in the given industry and the general fund of wages, considering the degree of technical equipment of labor. This degree is determined by the correlation between the value of the basic funds and the wages fund in the given branch of industry in comparison with the correlation between the value of all the basic funds and the general wages fund in the economy. The degree of the technical equipment of labor can be practically calculated by comparing the amounts of amortization of the basic funds in a given branch of industry with the total sum of amortization in the national economy. The degree of technical equipment of labor is a concept which depends on such concrete conditions as the deficit in the basic funds, the need for accelerated tempo of technical progress, etc. In order that the formula for the analysis of prices can reflect these conditions, the amount of amortization in the formula should be given with a certain coefficient. The coefficient of amortization could be equal to "one" or be more than "one," depending on the degree of deficit in basic means in the national economy and to what extent the tempo of technical progress is intensified at this or another stage of development of economy. Thus the formula of analysis of prices takes the following form: $C + v + (v + a \cdot p) \frac{S}{V + Ap}$,

* "Problems of Methodology in the Study and Calculation of Labor Productivity." Published by the U.S.S.R. Academy of Sciences, 1956.

* "Economist." No. 5. 1956, p. 87.

here v is the fund of wages in the given branch of industry, a
e amount of amortization in the given branch of industry, p
e coefficient of amortization, S the aggregate surplus-product,
the general fund of wages and A the total amount of amortiza-
on.

According to this formula, the share of the value of the aggre-
te surplus-product included in the prices of various products
proportional, not to the expenditures of living labor (v), but
the expenditures of living labor plus consideration of the de-
ee of its technical equipment.

The following arguments can be adduced in favor of using this
rmula for the analysis of prices and profitableness: a) it con-
ders as a criterion of accumulation (profit) not only living la-
r, but also the value of the basic means, the amount of which
nnot be indifferent for a socialist society; b) the expenditures
raw-materials, semi-manufactured goods, etc., enter in the
rmula only as a part of expenditures on production, and this
distinction from the formula of cost plus average profit) al-
ws us to determine the amounts of accumulation, not on the
sis of more or less casual factors, but on the basis of the
tual efforts of the collective bodies of the enterprises.

One of the basic problems of the theory of prices in socialist
nomy is the problem of interdependence of prices of the
ans of production and the prices of consumers' goods. This
blem is closely connected with the question of how the thesis
Marx that the sum of the prices of commodities is equal to
sum of their value should be understood under socialism.
We think that the thesis of Marx about the equality of the sum
prices to the sum of the value of commodities cannot be
chanically introduced into the situation under socialist econ-
y. The premise of such an equality is the regulation of
ces on all commodities by the law of supply and demand and
existence of a uniform system of prices embracing the
ans of production and consumers' goods alike. In a socialist
nomy prices of the means of production are not regulated by
law of supply and demand. Two different levels of prices
rate.

The essence of the thesis about the equality of the sum of
ces and the sum of the value of commodities is reduced to
fact that a given sum of prices always reflects a given sum
alue. In other words, with the help of prices it is possible
distribute only what was produced as a result of the expendi-
e of a certain amount of social labor. This general meaning
Marx's thesis has universal significance, it applies to capital-
and socialism as well. At the same time Marx's thesis has
pecific content, indicating that deviations of prices from the
regate value of products are counterbalanced. This is cor-
t only under conditions of a uniform system of prices. Ob-
usly this specific meaning of Marx's thesis cannot be applied
er conditions of socialist economy. In the press of socialist
ntries the opinion was expressed that the law of value de-
nds that the expenditures of social labor embodied in means
roduction as well as in the consumers' goods should receive
orm expression and that the unit of currency functioning in
the branches of national economy should represent one and
same amount of social working time.

ne should first of all point out that the opinion according to
ch the thesis about the equality of the sum of prices and sum
alue in principle is applicable to the socialist economy as
h as to the capitalist economy does not consider the specific
racter of capitalist and socialist economies. Besides, it
radicts the facts of development of the socialist economy in
ch a change in the prices of the means of production does not
essarily result in changes of prices of consumers' goods and
versa.

arx's thesis about the equality of the sum of prices and the
of values is applicable only to commodities which circulate
he market, i.e., are sold on the basis of the operation of the
of demand and supply. In a capitalist economy a part of the
ns of production does not enter into market circulation, but
sed by the capitalist enterprises which have produced them,
y the concerns to which these enterprises belong. The cal-
tions on such means of production are made not according
arket prices, but by their cost. It is clear that to include
prices of the means of production which are used by the en-
rises that have produced them and are accounted according
to their cost in the equation "the sum of prices on the commodities is equal to the sum of their value" would deprive this equation of any economic sense.

In a socialist economy prices of the means of production which circulate among socialist enterprises are not subject to the operation of the law of demand and supply. Therefore one cannot include in the equation "the sum of prices of commodities is equal to the sum of their values" the means of production circulating among the socialist enterprises.

The equation "the sum of prices on commodities is equal to the sum of their values," as we have seen, has a formal and an economic side. The formal side means that the given sum of prices always corresponds to some sum of values. This is true with any changes in the prices on commodities independent of any changes of the sum of their values. But if we include in this equation the prices of the means of production which are established below value, we would ignore the fact that the scale of prices (purchasing power of money) is not the same in the sphere of consumers goods and in the sphere of means of production.

Under conditions of a socialist economy the inclusion of means of production in the equation "the sum of prices on products is equal to the sum of their values" would impart to the problem of correlation between the sum of values and the sum of prices a formal character. In Marx's thesis the question is not about the formal or arithmetical side, but about the essence of the matter, about its economic side. This side shows that if we consider the market prices which are governed by the law of demand and supply, then deviations of prices from values in one direction are compensated by deviations in the opposite direction. It is obvious that if we include in the equation "the sum of prices of products is equal to the sum of their values" the means of production, which are not subject to the law of demand and supply, no mutual compensation of deviations of prices from values is possible.

The concept of the average scale of prices, or average purchasing power of money, applicable to the means of production and consumers goods, generally speaking, has no great significance for economic analysis. The purchasing power of money is determined by the possibility of buying certain consumer goods with one unit of money or with a certain amount of monetary units. The purchasing power of money reflects, consequently, the change in the cost of living, and not the change of prices in general. The concept of the average scale of prices or average purchasing power of money has therefore basically a formal character and is not applicable to the analysis of the problem of correlation between the sum of prices and the sum of values in a socialist economy.

Under socialism there are, as a matter of fact, two different scales, or two levels of prices: a lower one on the means of production, and a higher one on goods for consumption. The existence of two different scales is the result of different methods of determining prices in the spheres of means of production and of consumers goods. As for the mutual compensation of the deviations of prices from values, it occurs only when prices are determined by a uniform method. Obviously with two different methods of pricing there cannot be such a compensation.

It follows from the above that the equation "the sum of the prices of products is equal to the sum of their values" has, under socialism, not only a formal content but an economic one, if on both parts of this equation are included only the commodities which are subject to the operation of the law of demand and supply, i.e., basically consumers goods.

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How is the influence of the law of value on the prices of products manifested in a socialist economy? One can say with conviction that this influence is not manifested in the exchange or in the circulation of products on the basis of their value. This is confirmed by daily practice as well as by theoretical considerations, which show that exchange according to value, characteristic of a society with a primitive level of development of productive forces, cannot take place in a socialist economy, where productive forces have achieved a high level of development. Besides, one should keep in mind that the level and correlation of prices of consumers goods cannot correspond exactly to their value, otherwise prices would not deviate from value which is, in particular, the result of the relation between

demand and supply. So long as consumers goods are produced as commodities, prices on them are determined on the basis of the balance between demand and supply. The very concept of price implies its deviation from value, and the basic trait of value is the fact that it cannot be revealed and calculated any other way but through price, and by the very nature of the matter this calculation has to be of very approximate character.

The point of departure in pricing is the amount of expenditures on production. The main theoretical problem in determining prices on consumers goods, consequently, is in finding the size of the addition to the cost of production. This addition depends on the correlation between supply and demand.

Certain help in determining the size of addition to the cost of production, i.e, in establishing prices, could be obtained through determining that part of the aggregate surplus product which should "theoretically" enter into the price composition of given products. In our opinion, solution of this problem would be facilitated by using the formula for the analysis of prices given above.

In socialist economy the law of value determines before anything else the general limits of circulation and exchange with the help of prices. This is manifested in the fact that the value of consumers goods is equal to the sum of monetary income of the population, taking into consideration the changes in the status of money in circulation and the savings of the population. The value of articles of consumption is expressed in the sum of prices on these articles. When this sum is equal to the monetary income of the population, then the assertion that the sum of prices on the articles of consumption is equal to the sum of their value completely corresponds with actuality. If the sum of prices of consumers goods is lower than the sum of the monetary income of the population, it means that the prices on these goods were established at a lower level than their values. Finally, if the sum of prices on consumers goods is higher than the sum of monetary income of the population, then it means that prices were established at a level higher than values.

In case of general equality of the sum of prices of consumers goods and the sum of their values, the prices on certain articles are established higher than their values, and on some others lower than their values, and prices higher than values are supposed to be balanced by those lower than values.

The value of the means of production is equal to the sum of monetary income which the socialist economy may spend for purchasing them. The manufactured means of production are used for: a) replacing the means of production which were utilized and b) for accumulation. If the prices on means of production, representing the fund of replacement, are established below value then accumulation by the enterprises producing these means would be lower by the difference between the sum of value and the sum of prices on them. But at the same time the enterprises using these means, buying them at prices lower than their value, have correspondingly higher accumulations. Thus, on the scale of the entire national economy equalization of accumulations occurs.

The situation is similar in respect to the prices of means of production utilized for accumulations. If these prices are established below the value, then the enterprises manufacturing means of production have correspondingly less accumulations, but at the same time the state may carry out capital investments spending correspondingly less money. Thus, on the scale of the entire national economy the level of prices of means of production has no effect at all on the general financial results of the state sector of industry. In the sum of prices of consumers goods a surplus product is formed, created in department II, and a part of the surplus product created in department I of social production, in case it was not completely realized there.

If products were exchanged in accordance with their value, price would be determined by the expenditures of social labor needed for their reproduction. But real pricing is determined by much more complex factors. One of the components of price—the cost of production—includes the expenditures needed for the reproduction of the means of production utilized and the total of wages paid. The relation between wages and net production, in turn, is determined by the existing proportions in the distribution of the national income. The second component part of price—the value of the surplus product included in it—under such a system of pricing would be determined by the share of surplus product entering into the price, on condition that demand and supply are equal. But, because complete conformity between demand and supply is not practically attainable, the relation between demand and supply affects the price.

Thus the influence of the law of value on prices is very complex. It means, first of all, the necessity that prices cover at least the cost of production (this applies to means of production, as well as to consumers goods) and also the necessity of establishing prices on consumers goods on a level which secures the balance between demand and supply.

Then it should be clarified, in turn, on what the relation between demand and supply in a socialist economy depends.

The total supply of consumers goods and their basic types is determined by the state. By its policy in the field of wages, purchases, taxation, etc., the state also determines the total demand, i.e., the sum of monetary income of the population. But the state does not determine the demand for various articles of consumption. Each consumer, having monetary income, may freely spend it for buying various articles. Although this freedom of the consumer is to a certain extent relative because of the amount of monetary income and the social and family position of the working people, assuming a given level of prices, all of which determines to a considerable extent the character of their expenses, still this freedom is an important factor in determining the demand for various types of goods.

Thus, the state (more or less exactly) determines the total supply and the supply of various types of goods, and also the total demand, and thereby the demand for various goods. Given the decisive role of the state, a considerable influence on this correlation is exerted by the choice of different types of goods by the consumer.

In what way does the relation between demand and supply exert an influence on the price level? Let us assume that there is an "ideal price," i.e., a price formed in complete conformity with demand and supply. With a given monetary income in the hands of the population, to have such a price it is necessary to have a certain supply.

Let us illustrate this using as an example the determination of prices on passenger cars and vodka in people's Poland. The "ideal price," considering the above listed premises, cannot be high, for such a price level is not justified by the demand being greater than the supply. But what happens in case the possibilities of domestic industry and the import of automobiles are not adequate to meet this demand? Under conditions of free retail trade, instead of the "ideal price," there would be a higher price, including an addition which results from the relation between demand and supply, and this addition will be higher as the difference between demand and supply and "ideal price" is greater. Only the expansion of supply, i.e. the increase in the domestic output or import of automobiles, would be a factor which, assuming a given amount of monetary income, will permit a reduction of the price and bring it closer to the "ideal price."

With the price of vodka the question stands somewhat differently. The "ideal price" (and value) of vodka is relatively low, for the cost of its production is also low. With an "ideal price" of vodka the demand for it would be very high. The state could satisfy this demand, for there are possibilities for increasing the production of vodka. But the state, for a number of reasons, is limiting the supply of vodka and sets a price on it on a level higher than the "ideal price" (and value). The established price of vodka balances the demand and the limited supply and includes an addition resulting from the relation between demand and supply. From the social point of view it is not expedient to increase the production of vodka and to bring its actual price closer to the "ideal price."

From this it follows that prices on some products must be established on a high level, i.e. include the addition resulting from the relation between demand and supply because of the impossibility or inexpedience of meeting the demand at a lower price.

How do the prices of other goods effect the establishment of prices on some goods at a higher level (i.e. including an addition resulting from the excess of demand over supply) if in principle these other goods could be sold at the "ideal price"

ecause the demand for them could be balanced? Prices on such oods are set at a level lower than the "ideal price" because, s result of purchases by the population of goods with a high vel of prices (in our example — automobiles and vodka) the onetary income of the population, which could be used for the rchase of other goods is lowered, i.e. the aggregate demand these goods is decreased. As the result, an excess of potenal supply over demand appears and the actual prices are set a level lower than the "ideal price."

The deviation of actual prices from "ideal prices" is absolute- unavoidable because the demand and supply on various goods balanced only as a matter of exception.

A certain relation exists between prices and the volume of oduction. Some economists consider that the development of oduction depends on the dynamics of prices. As a matter of ct, it is not so: in the relation between prices and production e decisive role is played by production. The dynamics of ices in the end reflects the development of production. The vel of prices is determined by the condition of the productive rces, the amount of aggregate product and national income d the proportions in which this income is distributed. Thus, e decisive influence on price policy is exerted by economic licy in the field of production and foreign trade.

One should not forget, though, that in a socialist economy oice by the consumer is an essential factor, changing the rela- n between demand and supply for various goods. These anges influence in turn prices and the volume of production. us in the relation between prices and production the decisive le is played by production, but the dynamics of prices — in nnection with changes in the relation between demand and pply — also exerts a certain influence on production, especial- during short periods of time.

Konnik:

ne Formation of Prices and the Problem Money under Socialism

n the discussion on the determination of prices under social- the basic attention of its participants normally is concen- ted on defining the principles of determining prices which st completely take into account the demands of the law of ue. But some economists ignore, in our opinion, two rather portant circumstances. First, the law of value under social- does not operate in isolation, but in the system of economic s of socialist society. If one considers that under capitalism law of value is modified according to the basic law of that er, into the law of prices of production, and then at the stage mperialism into the law of monopoly prices, so much more is modification unavoidable under conditions of socialism when eases to be the regulator of production and is subjected to the ration of the basic economic law of socialism and the law of ned, proportional development of the national economy. Sec- ly, all the participants of discussion admit that under social- price is the money expression of the value of commodities. ertheless, when studying the operation of the law of value in process of the determination of prices, the role of money is n ignored.

the present article the above two problems are discussed in our opinion, it is impossible to solve correctly the prob- of determining prices without taking these issues into con- ration.

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he operation of the law of value in the process of determin- prices is decisively affected by the production relations railing in the given society. This means that the economic position of price as the monetary expression of the value of modities is different in different socio-economic formations. ain economists when discussing the problem of pricing in USSR refer to Lenin's well-known thesis that "price is the ession of the law of value. Value is the law of prices, i.e., generalized expression of the phenomenon of price,"* and draw the conclusion that value as a law regulates prices in a socialist society. But these general theses give no answer to the question as to what is the specific character of the mode of operation of the law of value in the process of pricing in a socialist economy.

It is known that the exchange of commodities approximately according to value had a place in the simple commodity economy for thousands of years. Such a manifestation of the law of value was determined by the backwardness of the productive forces, the prevalence of manual labor, and consequently the absence of essential differences in the level of actual expenditures of labor by individual producers and the socially necessary expenditures of labor, as well as by the peculiarities of the production relations, based on private ownership by the small-scale producer of the means of production and of his personal product.

Under capitalism the law of value is manifested in the modified form of prices of production and market prices fluctuate around the prices of production. Such a form of the law of value under capitalism is based on considerable distinctions in the organic composition of capital in various enterprises and also on the fact that the manufactured products appear as products of capital.

During the imperialist stage of capitalist development in connection with the high level achieved in the concentration of production and capital and the resulting changes in the production relations in capitalism (transition from prevalence of free competition to that of monopoly) the operation of the basic economic law of capitalism changes and the aim of production becomes the securing of monopolistically-high profit. Consequently, the law of value is manifested not in the form of prices of production, but in the form of monopolistically-high prices, considerably deviating from value.

Thus the content of price as an expression of the law of value changes along with changes in the production relations during the transition from one form of socio-economic formation to another, as well as within the limits of the given formation; this content is determined by the operation of the basic economic law of one or another method of production.

In socialist society the content of the price, as a manifestation of the law of value, substantially changes. Because the basis of production relations under socialism is social ownership of the means of production, the law of value ceases to act as a regulator of production, and its operation in the sphere of circulation as a sort of regulator of exchange loses its spontaneous character. In this respect the mechanism of spontaneous pricing inherent in capitalism is changed by the mechanism of planned pricing based on deliberate utilization, not only of the law of value, but of all the economic laws of socialism and, first of all, its basic economic law.

The Communist Party always stressed that price policy is one of the central economic and political problems of Soviet economic policy, that in it all the basic economic and consequently political problems of the Soviet state cross. This thesis of the Party constitutes the foundation for the analysis of the laws regulating the process of pricing in a socialist economy; it directs us to the thorough consideration of the demands of all the economic laws of socialism in carrying out a planned price policy. Ignoring this thesis inevitably leads to making the law of value a fetish as the regulator of prices and conceals the peculiarities of the operation of this law under socialism.

Certainly under the conditions of socialism too the objective basis of pricing is the demand of the law of value for the exchange of commodities in accordance with the amount of socially necessary labor contained in them. But the operation of the basic economic law of socialism and the law of planned, proportional development of the national economy modifies the manifestation of this demand of the law of value in the process of pricing.

Before anything else price is the instrument for the realization of the demands of the basic economic law of socialism. This means, firstly, that the level and relation of prices on various commodities must be established while considering the necessity of gradually creating a structure of consumption which corresponds to the task of most completely and thoroughly satisfying the needs of people. The Soviet state establishes prices on certain goods below value and in some cases even below the cost of production if it is necessary in the interests of improving the structure of consumption. It compensates for losses at the expense of higher prices on goods on which it considers it expedient to limit

* I. Lenin, "Works," Vol. 20, p. 181.

consumption. Secondly, the system of prices must guarantee a certain level of consumption of the low-income categories of workers and the systematic rise of this level. In connection with this low retail prices on goods of mass-consumption are established. Thirdly, in determining the level and relation of prices on goods, the necessity for a more rapid growth of consumption by the collective farmers should be considered in order gradually to bring closer the level and structure of consumption of urban and rural populations. Therefore the proper relation between prices of industrial and agricultural goods has very important significance. This principle found its practical manifestation in recent years in the fact that the Party and the government have considerably increased the selling and purchasing prices of agricultural products. This resulted in a change in the relation between the prices of industrial and agricultural commodities and in a direct increase in monetary incomes of the peasants in terms of tens of billions of rubles.

Some economists, in particular Comrade Kondrashev, believe that "the problem of establishing the proper relation between the incomes of different groups of the population cannot be solved through prices and the deviation of prices from value; the limits of using price as a regulator of personal incomes are predetermined by the value of commodities and the relation of prices on similar articles." Only "defects in the normalization of wages demand the use of price as a regulator of the incomes of population;" while in principle "the system of wages and other incomes of the population should be worked out independently considering the principle of payment according to the labor performed. The system of prices has to be built on the solid foundation of the cost of production."*

In our opinion, such a point of view leads to negating the decisive role of the basic economic law of socialism in the process of determining prices and to the exaggeration of the role of the law of value, making it the decisive factor in pricing. Thus it seems that utilization of price as a regulator of incomes is not an objective necessity but a result of defects in carrying out the wage policy, that the system of wages could be built independently without considering the existing price system. This assertion ignores the peculiarities of the operation of the law of value, the fact that it is subject to the basic economic law of socialism.

Certainly the problem of the proper relation between the incomes of different population groups cannot be solved through price policy alone. It must be solved primarily by regulating the wage system, the tax system, free services and privileges granted by the government to the population, etc. But there is no doubt too that one of the main methods of regulating the real incomes of the population, along with the wage system, is the system of retail prices, which is constantly used by the Party and the government for realizing the demands of the basic economic law of socialism.

Price in a socialist society is also an expression of the demands of the planned, proportional development of the national economy. In resolutions of the Communist Party it has been noted that prices express the problem of securing the mutually connected and mutually determined development of agriculture and industry, the problem of distributing the national income and the connected problem of industrialization. The price policy determines the tempo and perspectives of development of industry and agriculture, the tempo of socialist accumulation, etc. This means in the first place that prices on consumers' goods are a tool for balancing the money incomes and expenses of the population, securing the planned coordination of purchasing demands of the population with the volume of commodities to be realized and thereby the stability of money circulation. Secondly, prices on agricultural commodities and their relation to the prices on industrial goods influence the tempo and proportional development of industrial and agricultural production; these prices stimulate the development of various branches of agriculture and the growth of income of the collective farms. They determine the possibilities for accumulation in agriculture and industry as far as the correlation of prices on industrial and agricultural goods is connected with the distribution of national income between these two branches, etc. Thirdly, the relation between the prices of means of production and consumers goods must guarantee the redistribution of accumulations created in industry; this is necessary for the preferential development of heavy industry.

All these points relating to the objective conditioning of price policy by the demands not only of the law of value, but also of other economic laws of socialism, and before anything else the basic economic law and the law of planned, proportional development of the national economy, should be stressed. Otherwise the specific peculiarities of the process of pricing in a socialist society could slip out of the field of vision.

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Those economists who advocate a general increase in prices of the means of production (J. A. Kronrod, D. D. Kondrashev and others) argue that the law of value demands that prices should be closer to value. Let us see if these arguments are correct.

The most important demand of the law of value is that the exchange of commodities should be carried out in conformity with the amount of socially necessary labor embodied in them. It means that the relation of prices on commodities has to reflect the relation of their values, but not necessarily that prices should coincide with value. Marx and Engels always underlined that the law of value can manifest itself only in deviations of prices from value, and not in their rapprochement.

The question is: what dictates the necessity of bringing prices closer to value under socialism along with the rapid growth of the productivity of labor and planned redistribution of national income in the interests of continuous growth of socialist production and systematic increase of the people's welfare?

Comrade Kronrod, proceeding from the far-fetched principle of drawing prices closer to values, proposes to build pricing in all spheres of the national economy on the basis of the proportion $\frac{S}{V}$. In effect it means the application of the principle of pricing inherent to the simple commodity economy under conditions of new economic categories inherent in developed commodity production (value of the surplus product, wages, norms of accumulation, etc.). The contradiction of the conception of Comrade Kronrod is revealed in the confusion of economic relations inherent in different epochs. If we accept the proposal of J. A. Kronrod, the result would be that the most profitable branches and enterprises will be those which are technically backward and labor consuming, and therefore the stimulus for technical progress will disappear.

Comrade Kronrod asserts that the measures taken by the Party and the government during recent years in the field of pricing are directed towards bringing prices closer to their values, and therefore life dictates such a rapprochement. But this is not quite so.

At the basis of raising the selling and purchasing prices carried out in recent years was the necessity for securing the proper relation of prices on products of various branches of agricultural production, and not the abstract principle of rapprochement of prices to values. As it is known, there is still considerable difference between the selling prices and the values of agricultural produce. Such a difference is unavoidable as long as the level of selling and purchasing prices of agricultural produce must secure a redistribution of the value of the surplus product created in agriculture and compensation for state expenditures on the development of agricultural production.

The raising of wholesale prices on the means of production in 1949 and then the repeated reduction of them does not at all testify to the rapprochement of these prices with value, because the raising of wholesale prices was called for not by the growth of the value of the means of production, but by certain factors demanding the increase of the cost of production (the growth of wages, increase in prices on various types of raw material, etc.).

The systematic lowering of retail prices in the post-war years also does not testify to any rapprochement of prices with values. It is easy to be convinced of this by comparing the present level of retail prices and the productivity of labor in the branches producing consumers goods, with the corresponding indices of the pre-war period.

Certainly, one cannot draw the conclusion from all that was said above that any rupture between prices and value is permissible. Too serious and unjustifiable ruptures are not expedient, but this

* D. D. Kondrashev, "Pricing in the Industry of the USSR." Moscow, 1956.

oes not mean that there is some law of rapprochement of commodity prices with their values.

Some economists, agreeing with Comrade Kronrod that prices ave to be brought closer to value, propose to build prices not the basis of the proportion $\frac{s}{v}$, but on consideration of the so-lled "average social value," i.e., through adding to all the oduction expenditures an equal share of profit. But this pro-sal contradicts the point of departure of the authors, for ices determined in this way will never approach the value of e goods. The market prices built on the principle of prices of oduction, as indicated by Marx, lead to stable and considerable viations from value. In such case what remains of the princi-e of convergence of commodity prices and values suggested by ese authors?

The groundlessness of this proposal consists not only in its gical inconsistency. It is quite inadmissible to transfer me-anically the principles of pricing formed in capitalist society o the conditions of socialism with its completely different vs of determining prices. If the law of prices of production rresponds to the basic economic law of capitalism, for it se-res equal profit on equal capital, what sense could it have un-r socialism, where automatism in price formation contradicts very nature and purpose of prices?

Comrade Kronrod supposes that the relation of prices of ans of production and consumers goods formed in our econ-y is a kind of survival of the transition period, a product of "struggle between the planned and spontaneous price." One not agree with that. Is it possible that during the 20 years t elapsed after the completion of the transition period and the idation of exploiting classes in our country, that price policy he USSR had no scientific basis and was built on principles licable only for the economy of the transition period? In our nion, the policy of low prices on means of production is not anachronism, but a characteristic peculiarity of pricing under ialism, a specific form of the operation of the law of value in new economic conditions.

omrade Kronrod asserts that stable deviations of prices from ues on means of production supposedly contradict the de-nds of the law of value. This is not so, if for no other reason that under capitalism the prices of means of production as le are higher than their value, for heavy industry is a branch a high organic composition of capital, and prices on con-ers goods are lower than their value because the branches ducing them have a relatively low organic composition of tal. But if the stable deviations of prices from value in both rtments of national economy are only a form of manifesta-of the law of value under capitalism, then why should such le deviations under socialism be considered as a violation ne demands of the law of value?

a socialist society the circulation of means of production is a transfer from one owner to another. This creates the pos-lity of realizing the means of production at prices below r value. At the same time there is the objective necessity r socialism of realizing the means of production at prices w value. Such a necessity is conditioned by the following iderations. First, the interests of securing the preferential th of production of the means of production demand that a of the expenditures on the creation of new branches and the tering of new technique in heavy industry should be covered e expense of higher prices on the production of Department nd this is quite normal, for in our conditions the constant th and perfection of socialist production on the basis of the st technique serves in the end to satisfy fully the needs of ntire society. Secondly, the interests of securing constant nical progress in all branches of the national economy also te low prices on the means of production. Comrade Kronrod iders this argument unconvincing. In his opinion, the re-d prices on the means of production only nominally decrease ases on capital investments, for the value of the means of uction is not realized completely in their prices. But this ment of Comrade Kronrod falls because capital construction t only realized through accumulations in industry, and hence ncrease of the purchasing power of money used for capital ruction broadens the possibilities for such construction. lly, the interests of centralized, planned financial support e process of reproduction requires the realization of a part of the net income created in the heavy industry, in prices on consumers goods. This is so because the period of production in the branches of Department II is shorter than the period of production in branches of Department I, thanks to which the regular replenishment of the fund of centralized net income is guaranteed. Comrade Kronrod thinks that the realization of the net income in prices of production of Department II, just the contrary, slows the receipt of net income created in Department I in the state budget. But one cannot forget that under conditions of socialism the period of circulation of the resources basically is determined not by the time of circulation of commodities but by the time of production, which is considerably shorter in the enterprises of Department II than in the enterprises of Department I.

The proposals concerning the general increase in prices on means of production are not only theoretically groundless, but also practically inadmissible. First of all, a general increase in prices of the means of production, when a considerable and ever-growing part of the means of production are allocated to the collective farms (building materials, chemicals, agricultural implements, automobiles, equipment for electric power stations, tractors, etc.), would lead to such a growth of expenses in agricultural production that it would become impossible to preserve the existing, already heightened level of selling and purchasing prices. Further, the increase in prices on agricultural technique would lead to a considerable increase in the expenditures of production in the MTS. One cannot imagine, moreover, that a general increase in the prices of means of production would not reflect on the standard of living of the population, because, as it is known, not a small part of the means of production is sold to the population through retail trade. Finally, a general increase in prices of the means of production, which constitute approximately two-thirds of the total manufactured social product, may unfavorably affect monetary circulation in the country.

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J. A. Kronrod and some other economists believe that a general increase in prices of the means of production would be essentially a purely technical operation, not affecting the prices on consumers goods, the purchasing power of the ruble and the income level of the population. They consider that in a socialist economy a change in the level of prices means only a change in the scale of prices, thanks to which, in their opinion, equality of the sum of prices on commodities and sum of their values is always automatically achieved.

To Comrade Kronrod and to certain other economists all this seems to be so simple because they start from an erroneous concept of the relation between gold, as a function of measurement of value, and the process of planned pricing under socialism. One has to say that this problem is not sufficiently worked out in our economic literature. The attempt to solve it made by Comrade Kronrod in the book "Money in a Socialist Society" cannot be considered as successful.

J. A. Kronrod believes that in a socialist society "the value of the aggregate social product, already previously expressed in gold as the sum of prices, i.e., in the form of an ideal amount of gold, is utilized for comparing with it the values of various products in order to give to value a monetary form," i.e., "the embodiment in commodities and measurement of labor as value occurs in the form of an historical chain process... Precisely this represents the specific mechanism by which gold is used as a monetary commodity."* The author considers that a change in the value of gold has no effect on pricing, because an elastic, sliding, actual scale of prices is created, i.e., along with the lowering of prices the actual content of gold in the monetary unit is constantly changing, and thanks to it, supposedly, the necessary relation between the sum of prices and the changing sum of value of the mass of gold is achieved. If the prices on commodities decline, then, in the opinion of Comrade Kronrod, the actual scale of prices increases and with the increase in prices it is decreasing. In our opinion, such a solution of the problem cannot be considered as correct.

First, only certain commodities can serve as a measure of value which have use value and value because the value of one commod-

* J. A. Kronrod. "Money in a Socialist Society." Moscow, 1954.

ity can be expressed only in the use value of another commodity. If so, how could the value of various commodities receive expression in some abstract value of the aggregate social product? As far as one cannot talk about the use value of the social product, it appears from the reasoning of Comrade Kronrod that the value of various commodities is expressed in...value. Secondly, to admit the existence of a constantly changing, sliding or fluctuating actual scale of prices means to admit the existence of a constantly changing actual gold content in our money. In such case what remains of the stable content of gold in the money of a socialist society, of stability of the Soviet currency? Thirdly, to admit the existence of a constantly changing actual scale of prices and of the content of gold in Soviet money logically leads to the erroneous conclusion that in the USSR's internal economic circulation along with the official, fixed scale of prices and gold content in the ruble (0.222168 gr. of gold) another actual scale of prices and another actual content of gold exist. Finally, the thesis that the value of commodities under socialism is expressed directly not in gold, but in the value of the aggregate social product, in essence is nominalistic, because in accordance with this thesis the equivalent of commodities is not gold, but the sum of prices of commodities, expressed in gold.

The question is: what actually is the connection of gold, functioning as a measure of value, and pricing; why do the changes in the value of gold resulting from the growth of labor productivity in the gold extracting industry, why do they not influence the policy of planned pricing in our country? This question cannot be solved if we imagine, as Comrade Kronrod does, that stable and considerable deviations of prices of various goods from their values is impossible.

We consider that the difference in principle of the function of gold as a measure of value under socialism and capitalism is determined not only by the planned character of commodity prices, but also by the planned character of gold "prices" in domestic economic circulation. In capitalist society the growth of labor productivity in the gold industry and the resulting decrease in the value of gold gives rise to an increase of the level of prices indirectly through the spontaneous mechanism of production prices. Exactly for that reason it is impossible to prevent spontaneous perturbations in prices stemming from changes in conditions of gold production. In a socialist society the enterprises of the gold extracting industry represent state, national property and carry on their activity, as other state enterprises, on a self-supporting basis. Therefore the socialist state can establish "prices" on gold according to plan, guided by the objective economic laws of socialism and considering the general principles of pricing in socialist society. In spite of the fact that labor productivity in the gold industry of the USSR is increasing, and consequently the value of gold is decreasing, the Soviet state, preserving unchanged the level of "prices" on gold, allows a planned deviation of prices from the value of gold. By doing so, it influences the level of profitableness of the gold extracting industry on the one hand, and neutralizes the influence of changes in the value of gold on the level of commodity prices on the other hand.

Some economists believe that if gold has no substantial meaning for pricing, but planned "price" instead, then gold ceases to be the measure of value. One cannot agree with that. In capitalism too changes in the value of gold influence the spontaneous determination of prices indirectly through the cost of production in the gold industry. Still it is considered beyond dispute that gold functions as the measure of value. In that case, why should planned pricing in the gold extracting industry of the USSR (with proper consideration of the objective demands of the law of value and other economic laws of socialism) hinder the functioning of gold as the measure of value?

The "price" of gold under our conditions is the amount of commodities that can be obtained for the gold weight equaling one ruble. Consequently, with each new decrease in prices of goods of mass consumption the purchasing power of gold, its "price," is increasing, though its value may remain the same or even become lower. The change in the content of gold in the Soviet ruble depends upon the change in the value of gold, but first of all on the basis of the planned decrease in prices of commodities and the growing purchasing power of the ruble. This does not mean, of course, that with each decrease in commodity prices the gold content of the ruble must increase, determining its rate of exchange, because the laws regulating the changes in the purchasing power of the ruble inside the country and its rate of exchange abroad are different in spite of the inseparable connection between them.

For the foreign rate of exchange of the ruble and its relation with foreign currencies an important role is played not only by the purchasing power of the ruble, but also by the relation between the domestic, planned "prices" and the spontaneous world "prices" of gold, as well as the gold content of foreign currencies. In this respect the question of the cost of production of gold as a monetary commodity acquires great significance.

Thus, in the economic circulation inside the country what is essential is not the value of gold, but the level of prices of commodities, i.e., the purchasing power of gold established by the plan. As for the value of gold, it preserves its significance for determining the profitableness of the gold extracting industry and for foreign economic relations, as long as there exists a world price on gold which is formed spontaneously.

If we rely on the conception of Comrade Kronrod concerning the necessity of bringing the prices of commodities and their values closer and the inadmissibility of stable deviations of prices from values, we should also carry out a revision of "prices" of gold, reducing them in accordance with the growth of labor productivity in the gold extracting industry and the decrease in the value of gold. But it is clear to everybody that such a price policy, only passively adjusting itself to the dynamics of value, would lead to the frustration of the policy of systematic lowering of prices carried out by the Soviet state, and would make it impossible to carry out the planned price policy. This fact also clearly reveals the groundlessness of the assertion that in a planned economy it is necessary to bring prices closer to values.

Certainly, if we agree with the characterization of the connection of gold (in its function as the measure of value) with the process of pricing given by Comrade Kronrod, then no decrease or increase of prices should have substantial significance insofar as it is only accompanied by a change in the scale of prices arising from the change in the actual gold content of the ruble. But as it was shown above, such a point of view cannot be accepted. It is also impossible to agree with the assertion of Comrade Kronrod that the change in the actual scale of prices in the socialist economy automatically secures the necessary equality of the sum of prices and the sum of values of the social product which has to be realized. Apparently Comrade Kronrod does not notice that in such a case the problem of securing equality of the sum of prices of commodities and their value is eliminated.

In a socialist society the equality of the sum of prices of commodities with the sum of their values is achieved not as it is under the conditions of capitalism, not automatically, but on the basis of balancing of the natural-material and value elements of the process of reproduction with the help of financial plans of the branches of the national economy, the state budget, the plan of credit and the balance of monetary income and expenditures of the population. This equality does not exist at every given moment — it is revealed during more or less long periods of time as can be seen, for instance, first from the fact that not every change in the value of commodities calls forth a corresponding change in planned prices; secondly, the change of the "price" of gold, as indicated above, does not correspond to the dynamics of the change in its value; and thirdly, violations in carrying out the financial plans also may be a cause of deviations of the sum of prices of commodities from the sum of their values.

Thus the general increase of prices of means of production proposed by some economists is far from a purely technical operation, and in the field of money circulation cannot be limited to a change in the scale of prices. Raising the prices of the means of production would undoubtedly have a serious effect in the sphere of money circulation. First of all, it would provoke an enormous growth of money circulation, especially at the expense of clearing. Because there is a close connection between clearing operations and payments in cash, unavoidably the result would also swell cash transactions with all its consequences. Further, the growth of prices of the means of production, without changing the income of the state budget, would result in raising

prices on capital construction, it would raise expenditures for financing agriculture, etc., which in the end would reflect unfavorably on the monetary economy. Finally, it would be followed by a lowering of the purchasing power of the ruble because a certain part of circulation of the means of production goes beyond the limits of the state sector: part of the means of production is realized by the collective farms, by the farmers and urban population.

The argument is also groundless, in our opinion, that the general increase in prices of the means of production supposedly is dictated by the interests of developing foreign economic relations, by the interests of utilizing the ruble as the currency for prices, payments, etc. The foreign trade of the USSR with the countries of the socialist camp is based on planned, coordinated, mutually profitable prices, different by their nature from the spontaneously formed prices of the world market. Aside from this, in the peoples' democracies, just as in the USSR, the policy of low prices on means of production is promoted. What sense could there be under such conditions to raise unilaterally the prices of means of production in our country? As for trade with capitalist countries, there are some inconveniences, but mostly in the field of statistical calculations. It would be wrong to change radically the principles of pricing in the national economy in order to eliminate these inconveniences.

All that has been said above does not mean at all that there are no defects in the system of pricing in the USSR. There are some defects, but they are related to the prices of the means of production as well as to the prices of consumers goods. But for their elimination no revision of the principles of pricing in the socialist economy is required. Securing a really scientific basis of pricing under socialism has nothing in common with an unreserved orientation towards the law of value and the forms of its operation inherent in simple commodity or in capitalist production. Not a hypertrophic law of value, but the law of value subordinated to the demands of the basic economic law and the law of planned, proportional development of national economy can effectively serve the task of communist construction.

. Petrov:

ffectiveness of Capital Investment in the ransport Industry of the USSR

The problem of determining the effectiveness of capital investment in the national economy of the USSR has been inadequately studied and poorly worked out. This is partly explained by the fact that many authors of works on the problem of effectiveness of capital investment underestimated earlier studies and renewed the investigation of the entire problem. Some of the problems have been sufficiently examined and there is no sense in turning to them.

In this respect the discussion started in 1953 on determining the economic effectiveness of capital investments in the industry of the USSR was of great importance. Some of its results are summarized in the magazine "Problems of Economics" (No. 3,1954). Among the adequately worked out questions, first of all, is the problem of commensurability of economy in current expenditures with additional capital investments. As a result of that discussion it was established that a direct comparison of current expenditures with capital investments, if made correctly, is nothing other than a comparison of the expenditures of past labor embodied in the fixed funds and materials with the expenditures of living labor.

Marxist-Leninist political economy not only does not deny the possibility of such commensuration, but scientifically substantiates it as the expression of the growth of the productivity of social labor. In spite of the difference between past labor and living labor, these quantities can be compared when determining value.

During the discussion the attempts to represent the monetary calculation in considering the economic effectiveness, as the expression of regulating influence of the law of value were also censured. The present understanding of the law of value does not exclude the possibility of using the money equivalent for the comparison of expenditures different in their character and in their time of realization.

So far we did not succeed in directly calculating expenditures in the form of labor, because there is no method for reducing to a common index the different specific types of labor performed in different branches and in different periods of time. Therefore the only available method of determining the aggregate expenditures of social labor (live and embodied in commodities) is in expressing these expenditures in monetary form, which permits the comparison of capital investments with the expected effect during a period of years.

In the process of the discussion it was also established that in many cases the appraisal of the variants in terms of value cannot serve as the decisive index of the degree of economy in the projected decisions. Value can be used only as one of the indices of the effectiveness of these projected decisions.

These results of the discussion, undoubtedly, played a positive role in the further working out of the theory of effectiveness of capital investments. At the same time it should be admitted that neither that discussion nor the works devoted to the given problem have supplied as yet a satisfactory answer to some important questions of theory and methodology for evaluating the effectiveness of capital investments.

The most important theoretical question connected with the solution of the problem of effectiveness is the question of determining the cost, the value and the price of the product. When planning capital construction and the introduction of new technique, usually the index of value is used, in consequence of which a considerable part of the expenditure of labor — labor for the society — remains underestimated. So far the principles of determining the social value of production have not been established and the methods for determining it in different conditions of production have not been worked out. The question of pricing principles under the conditions of socialist economy also is not sufficiently worked out. The present practice of determining prices with considerable deviations from values introduces an element of conditionality in calculating the effectiveness of capital investment. The discussion which has developed recently about the operation of the law of value under socialism and its use in the building of the economy also has very important significance for the solution of the problem of evaluating the economic effectiveness of capital investments.

The working out of the group of questions connected with the operation of the "time factor" also cannot be considered as completed. These are the questions of taking stock of technical progress, the wear and tear of the technical means and the change in value of the material resources with time. Without the proper solution of these questions it is not possible to solve specific problems relating to determining the disparity of expenditures made at different times, establishing terms of time when planning the objects of capital construction, determining the loss resulting from the freezing of capital investment, etc.

There is also not sufficient clarity in a number of methodological questions. For instance, there is no uniform opinion on questions concerning taking stock of expenditures in the interrelated branches of industry, of the assignments for amortization, etc.

For the evaluation of the effectiveness of capital investment when planning various objects different indices are used, sometimes enlarging them, sometimes narrowing them. Some authors propose to create a system of indices, others are seeking a uniform decisive index, and still others are satisfied with indices in the form of value; a few think that a great number of natural and qualitative indices should be used; while still a few others believe it necessary for there to be an inner connection among the indices forming a system. In other words, the question of creating a system of indices and the method of using them cannot be considered as solved; it demands attentive investigation and further working out.

To solve all these questions in their aggregate, i.e., the problem as a whole, further investigation should be carried out on a united front. For this purpose it is necessary to concentrate the efforts of various institutes and to create a special center for coordinating these efforts. For this purpose the Presidium of

the USSR Academy of Sciences has formed, in the Department of Economic, Philosophical and Legal Sciences, a special Scientific Council on the problem of "Economic Effectiveness of Capital Investments in the National Economy of the USSR."

The immediate task of this Scientific Council is the preparation of a program for working out the problem, and a methodical memorandum on the order of executing the investigations. In projecting this program, the following is involved: a general evaluation of the up-to-date status of this problem; justification of its formulation; a plan for solving the problem and the basic organizational measures necessary for its elaboration.

In essence what is new in the outlined investigation is the study of the actual effectiveness of capital investments carried out in the past, and also the utilization of the results of this study as the basis for working out the theory of this problem.

In order to solve as thoroughly as possible the principal tasks of the problem it is contemplated to execute the investigation by the method of consecutive approximations, solving the problems by concentric circles — first, in a general way, and then intensifying the study of various important parts of the work.

In the content of the first concentric circle of the investigation the following tasks are included: the examination of the extensive literature on this problem, including foreign literature; the study of modes and methods of evaluating effectiveness practiced before; and as a result of this the working out of methods of investigation in which the general contours of the basic theoretical problems requiring further solution already have to be outlined.

The second concentric circle includes the study of the experience in planning capital investments and their distribution among the branches of the national economy, inside of these branches and among different economic regions. In the same manner the experience in planning the objects of capital construction and in planning new technique should be studied. Here it is necessary to give an objective evaluation of the usefulness of the decisions made and of the correctness of methods for economic calculations. Utilization of the mass of data in such an analysis will allow the drawing of proper conclusions for making the basic theses of the methods of economic calculations more precise. In the processing of the mass of data the methods of mechanical computation should be widely utilized.

In the next concentric circle the general methodology for determining the effectiveness of capital investment and the introduction of new technique, with necessary theoretical substantiation of the fundamental questions of the problem, should be thoroughly worked out. Then the methodology of evaluation should be made concrete in conformity with the peculiarities and specific character of certain branches of the national economy: primarily the fuel industry, power, metallurgy, machine building and transport. In the final stage of the investigation ways for further increasing the effectiveness of capital investments and the introduction of new technique should be traced, as well as for improving the methods of planning and projecting.

In working out this problem the following institutes of the USSR Academy of Sciences should take part: the Institute of Economics; the Institute of the Complex Transport Problems; the Institute of Mining; the Institute of Metallurgy; the Institute of Power; the Institute of Machinery; as well as the scientific-research and planning organizations of different branches. The task of the latter would consist mainly in a critical analysis of the experience in planning and using of various methods of economic calculations. The conclusions drawn on the basis of such analysis will allow the discovery of general conditions and relations common to all branches of national economy, while practice in planning will give the necessary material for its substantiation.

The entire investigation of this problem is expected to be completed in 1960. This is not too long if compared with the many years period of trial and especially when one considers the complexity and difficulty in organizing this work.

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The problem of determining the effectiveness of capital investments cannot be discussed in a general abstract way without considering the questions related to it. This problem consists of two independent but interrelated parts:

a) establishment of the effectiveness of capital investments in the broadest plan, on the scale of planning the entire national economy;

b) determination of the effectiveness and degree of economization of the projects accepted in planning for various objects of the state plan.

The second part of the problem, although narrower in content, is related in essence to the total capital construction and the introduction of new technique in our country.

Let us examine the problem of determining the effectiveness of capital investments, using material on the development of transport in the USSR, and especially railroad transport.

The development of transport and especially of the railroads demands great capital investments. Therefore it is very important that every ruble should be utilized most rationally, with maximum advantage for the national economy. This can be achieved only when the plans according to which the capital investments are realized are formulated with complete conformity with the economic laws of socialism. Hence it is necessary above all to consider in the plans the demands of the basic economic law of socialism and the law of planned, proportional development of the national economy; the plans should be drawn up so that all the material and labor resources of society can be completely utilized and so there will be no dead surplus of means in one sector of the national economy and a shortage of them in another. In the case of transport this means that the plan of development must stipulate capital investments sufficient for the reinforcement of the technical resources of transport so that the problems of mastering the growing amount of shipments can be completely solved and at the same time the necessary reserves can be formed.

The question of the amount of capital investment required for the development of transport is a part of a more general question — the proportions of the national economy, the distribution of investments among various branches. Obviously transport must grow so that the development of production is not kept back. However, in the past, in planning the development of transport, there were deviations from the necessary proportions. The questions here concern the proportions between the growth of production in all the branches of the national economy and the growth of shipments; the share of transport in the production funds and the capital investments of the national economy; about the natural growth of the volume of passenger and freight transportation.

During the period 1913-1956 the total production of all branches of national economy rose (in value) 17 times, while industrial production rose 30 times. At the same time the freight turnover of all types of transport increased 11 times, and the work of the railroads 4 times. During this period the share of transport in the basic funds of the national economy gradually declined as can be seen by comparing the tempo of growth of basic funds of the national economy for production with the tempo of growth of the basic funds for transport:

Basic Funds of the USSR, 1913-1955 (% of 1913)

	1928	1940	1950	1955
basic funds of production	136	603	806	1320
in industry & construction	132	1085	1713	2941
in transportation & communication	131	485	568	755

The share of transport in the capital investments in 1918-1928 was 23.8%; in the Third Five-Year Plan 20.4%; in the Fourth Five-Year Plan 14.2% and in the Fifth Five-Year Plan 10.1%.

In principle the lowering of the share of transport in the basic funds of the national economy and in the capital investments is

uite regular, for in our country the process of industrializa-
on is being continued and the preferential development of the
eans of production is carried on. But, in our opinion, the
mpo of lowering the share of transport is too rapid.

The effectiveness of capital investments in the development
f transport as a branch of the national economy should not be
nsidered only from the point of view of income from ship-
ents and profitableness of transport as such. In some meas-
re part of the economic results achieved in all branches of
oduction served by transport is shared by transport. Im-
rovement in the work of transport decreases the mass of
eight remaining on the road, hastening the turnover of the cir-
ulating means, shortens the time of passenger journeys and
ecreases the value of all types of transported production.

Closely connected with the development of transport is the
crease of the physical volume of production; for instance,
arting the operation of new deposits of useful minerals, gen-
ally speaking, is not possible without building new railroads
branch lines. Therefore working out the problems of the effec-
veness of the development of transport in the broad plan of the na-
nal economy is one of the most important scientific-research
sks the fulfillment of which involves great difficulties.

One can approach the problems of evaluating the effectiveness
capital investments more concretely within the limits of
parate branches.

At the start of the industrialization of the country the problem
ose — to determine the means to develop transport in order to
cure the shipment needs of the national economy. It was neces-
ry to find the most effective way of developing transport,
aking it possible to master the growing amount of shipments
ainly through more intensive utilization of the existing means
conveyance.

Such a method of mastering shipments sufficiently was ef-
ctive in the past; it made it possible, with relatively limited
pital investments, to add new power to the railroads and to
crease the cost of shipments. It decidedly affected the re-
ion between the reconstruction of the ways of communica-
ns and new construction and resulted in a gradual decrease
the share of capital investments for new construction in the
al volume of capital investments ear-marked for railroad
nsportation.

Meanwhile, the rapid growth of shipments, mastered mostly
the existing main-lines of the railroads, led to an excessive
ncentration of shipments in certain decisive directions of
railroad network. The further development of railroad
ffic-capacity in these directions after their existing reserves
re exhausted demanded constantly growing capital invest-
nts and postponed putting new capacity into operation. Thus,
idea concerning the greater effectiveness of strengthening
existing lines compared with new railroad construction re-
res a revision, and substantiating the best relation between
m requires a special scientific investigation.

The effectiveness of strengthening the existing means of
nsport could be calculated in the following manner. It is
own that capital investments in electrification of railroads
h heavy loads are compensated by savings in operating ex-
ses in four or five years; considerable results are also ob-
ed by the use of motor-locomotives. Both of these types of
ction permit a considerable savings in fuel and substantially
mote the growth of labor productivity of railwaymen. To
culate the effect of introducing these types of traction, for
tance by 1960, we have to determine the savings in operating
enses which by approximate calculation will amount to five
six billion rubles, and to compare these savings with the
ital investments in these two types of traction. Besides, we
e to determine the fuel savings, which would amount to no
s than 15 million tons of theoretical fuel and the decrease
he number of workers (10 - 15%) as well as the decrease in
mass of freight remaining on the roads thanks to the ac-
eration of transportation. In the same way we can determine
effectiveness of capital investments into other measures of
onstruction — cars with higher loading capacity, heavier
s, proper ballast, etc.

is much more difficult to determine the effectiveness of
ital investments in new railroad construction, where the
ber of indices is greater and their evaluation much more
complicated. Three principal indices have great significance in the evaluation of the effectiveness of capital investments in new railroad lines: the size of the capital investments required, the cost of shipments, and the date when the new road is expected to be ready for use. But these indices do not exhaust by far all the questions affecting the determination of effectiveness. For a thorough analysis of the variants of capital investments it is necessary to compare their indices in the broader plan of the national economy. Doing this, very often it becomes necessary to solve the following basic problems: 1) how one or another variant would influence the situation with regard to serving adjacent regions and the perspectives of their economic and cultural development; 2) to what extent the different variants would secure the needs of development of various branches of industry and agriculture; 3) how would the new means of transportation influence the location of production and marketing in the entire country and in various economic regions; 4) how would one or the other variant affect the problems of specialization or industrial cooperation; 5) to what extent would the various ways of developing transport and placing its network secure the defense requirements of the country; 6) how would the planned measures be coordinated with the rational utilization of other types of transport. Some of these indices can be presented in monetary form, but most of them are expressed in natural form or could be evaluated only qualitatively. Here is the difficulty of finding a general evaluation by means of several indices. Apparently in every concrete comparison it is necessary to define the role and significance of every active factor and in the future to be guided by the one which is most important. At the same time it would be wrong to refuse to create a general system of indices, including the most typical types of comparison, and to work out a general methodology for using these indices. The solution of this task is one of the component parts of the problem of effectiveness of capital investments in the national economy of the USSR. In the present article we will limit ourselves to only a first approximation to the solution of this problem.

The mastering of new deposits of useful minerals by industry, the construction of large hydro-electric power stations, the drawing into the national economy of new lands and large forests, and other measures directed to the further development of production can be realized only with the construction of new avenues of communication, mainly railroads.

Building new lines to unload the existing ones or doubling the tracks not only solves certain problems of transport, but creates the possibility to master new regions, raise their economy, and to lift the cultural level of the population. In this way they differ favorably from the variants involving the strengthening of the existing network. The same should be said about the roads for other purposes — straightening the flow of freight shipments, bettering the maneuverability of the network, strategic lines, etc.

The methodology of calculating the effectiveness of construction of railroad lines leading to new centers of industry, can be described roughly in the following way. The value of the product of all branches of industry and agriculture, produced in the region adjacent to the railroad can be considered as a part of the capital investment not only in these branches of the national economy, but in the transport too. If for instance the capital investments in transport constitute one-quarter of the capital investments of all branches of the national economy in the region adjacent to the new road, we may consider that consequently one-quarter of the total production of these branches was obtained as the result of capital investments in transportation.

We should keep in mind that the quantitative expression of the effectiveness will always depend on what branches of production are developing in the region adjacent to the new railroad. In one case it will be, for instance, mainly the coal industry, in another the timber industry, and in still another light industry. The products of these branches have different use values. Therefore we cannot compare the effectiveness of railroad lines of different purposes. The comparative effectiveness can be considered from another angle. The question should be posed this way: how much more effective is it to develop the produc-

tion of certain type of product in the given region compared with the development of the same product in another region, on the basis of another deposit of minerals and using another railroad. One can also compare the effectiveness of mastering new natural resources with the effectiveness of increasing the production of the corresponding product through expanding the existing enterprises. In all these variations the share of transport must be considered in relation to the total volume of capital investments.

The economic effect of constructing a new railroad also lies in the lowering of expenditures on the transportation of freight and passengers compared with other means of transport. It is easy to determine this when knowing the volume of shipments and the cost of transportation per unit. When building new roads, which make it possible to straighten the flow of massive freights, their effectiveness is determined by the economy on shipments achieved as the result of lowering the volume of work per ton-kilometer.

The effectiveness of new railroad construction is far from limited by the features enumerated above. Many indices of the effectiveness of new railroads and their significance for the state cannot be measured by any value index. It is enough to say that new railroads promote the welfare and cultural level of the population, for they improve the conditions of supply to the population, help to enlarge Soviet trade, and promote better exchange of experiences and strengthen cultural ties.

The problem of comparative effectiveness of different types of transport is of great interest. Every one of them occupies its place in the unified transportation system of the country and has its economic advantages. But in a number of cases the same flow of freight and passengers can be mastered by various types of transport or jointly by several types. In order to select the most desirable method of shipments, it is necessary to determine the comparative effectiveness of possible variants of transportation.

To solve this problem in a general way, i.e. in order to define the limits of the advantages of utilizing different types of transport on the scale of the entire network of communication considerable scientific research should be carried on. The investigations carried through under the guidance of Professor T. S. Khachatourov in the Institute of Complex Problems of Transport at the USSR Academy of Sciences, made it possible to judge the effectiveness of different types of transport.

In a number of cases we had to reject certain conventional ideas about the comparative effectiveness of different types of transport. For instance, it is often considered as a postulate that river transport has some advantages in comparison with other types of transport. It is thought also that building highways is less expensive than railroads, that it is easier and quicker to organize communication by auto than by railroads. But such points do not give a complete idea of what is actually the comparative effectiveness of different types of transportation.

At present a system of indices of effectiveness of different types of transport is being worked out. Among them are the following indices in natural and value form: capital investments, the cost of transportation, the productivity of labor, the expenditure of fuel and metals and the speed of delivery.

In comparing different types of transport by the size of capital investments one can see that the absolute size of investments per unit of length of network are the highest for the railroads. One kilometer of a single-track railroad of broad gauge is estimated from 0.8 to 2.5 million ruble, depending on the character of the ground and other conditions; the cost of basic materials required for the construction of one kilometer of water-way (river) amounts to 200-250 thousand rubles and of one kilometer of highway from 300 to 800 thousand rubles.

Thus, the construction of one kilometer of a railroad is 4 - 10 times more expensive than one kilometer of automobile road. But these data are not sufficient to judge the effectiveness of capital investments in different types of transport, because it is necessary to consider the different amounts of freight to be transported by them. If we accept as the average load transported by railroads eight million ton-kilometers per kilometer, by waterways 800,000 ton-kilometers per kilometer and by automobile roads 100,000 ton-kilometers per kilometer, then per each ruble of capital investment there would be the following amount of ton-kilometers in a year:

by railroads	3-10
by water-ways	3-4
by automobile roads	0.12-0.33

Another important index of the effectiveness of different types of transport is the cost of transportation. It is usually thought that the cheapest is transport by water-ways, then by railroad, by auto and by air. In comparing the actual data of the average cost of transportation by different types of transport it is revealed that the cheapest of them is by sea, where the average cost per ton-kilometer in 1956 was 2.67 kopeks, which was 29% less than in 1950. The cost of transportation by river is somewhat higher — 3.41 kopeks in 1956. It was 3.70 kopeks by railroad in 1956.

The average cost of auto transportation in 1956 was 70 kopeks per ton-kilometer for total auto transport and 49 kopeks per ton-kilometer for general use, where autos have a higher carrying-capacity and are better utilized. The average cost of transportation by pipe-lines, depending on their capacity, is from 0.6 to 1.5 kopeks per ton-kilometer.

When comparing the costs of transportation by different types of transport, one has to consider the incomparability of the data of reports and the necessity of making adjustments in them. For instance, in water-way (river) transport expenditures on the maintenance of the water-way are not included in the cost of transportation, for they are financed from the state budget, but they amount to 15% of the operating expenses. In transport by sea the cost of transportation does not include the expenditures for the maintenance of sea-channels, light-houses, and other coastal constructions, which constitute about 10% of the operating expenditures. When considering the expenditures for the maintenance of the way, the cost of transportation per one ton-kilometer by river is higher than by railroads, and the cost of maritime transportation equals that of railroads.

In auto transport the maintenance expenses amount to 15 - 18% of the total operating expenditures, but if the amount of freight is limited this percentage is not adequate to cover the actual expenses necessary for the maintenance of the roads in proper repair. On the other hand, the tax on fuel increases the cost of auto transport by 7 - 8%.

Such are the relations between the cost of transportation by different types of transport at present.

In perspective we may expect a considerable reduction of the cost: on the railroads in connection with the large-scale introduction of electrical and motor traction; river transport by means of greater-capacity boats and methods of propulsion; on the sea thanks to the introduction of more economical, speedier vessels with higher carrying capacity; in auto transport by means of greater use of trailers and semi-trailers, by the introduction of two shifts of work and further enlargement of the fleet of motor vehicles.

The general introduction of advanced methods of labor in transport is also very significant for lowering costs. The socialist ownership of the means of production, the liquidation of exploitation of man by man, the high consciousness of the builders of communist society — all this creates conditions for the development of the initiative of the workers, engineers and technicians in all the branches of the national economy, including transport, in perfecting technological processes. This will improve the utilization of the basic means and raise the productivity of labor.

The methods of calculating labor productivity in various types of transport still need more definite specification. In the contingent of workers by which labor productivity is determined in all types of transport uniform categories of workers should be included. In particular in railroad transport, in the contingent of operating workers, workers of all services are included, such as track maintenance, traffic management, communications, etc. Those working on maintenance should be included in the working contingent of river and sea transport.

Another natural index of the comparative effectiveness of transportation by different types of transport is the expenditure of fuel. In 1955 the expenditure of fuel per 1,000 ton-kilometers was 58 kilograms of conventional fuel on the railroads; in river transport 35 kilograms; in maritime transport 34

lograms and in auto transport about 200 kilograms. This eans that with low transportation speed river transport is the ost economical in the expenditure of fuel. But if the speed is ised the expenditure of fuel on water transport increases more pidly than on railroad transport.

A very important index of effectiveness of the work of different pes of transport is the average speed of transporting freight. present it is as follows: on railroads — 7-8 kilometers per ur; on rivers — 3 kilometers per hour, in auto transport — 15 lometers per hour, via pipe-lines — 4-6 kilometers per hour, c. Raising the speed has great economic importance because makes it possible to accomplish the haulage with a smaller nount of rolling stock, locomotives, and cars and all other eans of transport, with a smaller number of workers and orter delays in the process of transport.

The natural and value indices listed above allow us to get antitative evaluations when comparing the advantages of dif- rent types of transport. But these indices, based on averages, ll are not sufficient for the solution of specific problems of stribution of transport, for on certain sections of the net-work ey may sharply deviate from the averages. Therefore the in- es used in calculations should be differentiated within a cer- n range allowing us to consider the influence of local condi- ns and other factors.

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The effectiveness of an object taken separately, the construc- n of which is designed by the state plan, most often is con- dered in its comparative aspect. In that case the task is in lecting the optimum technical solution out of a number of pos- le variants. The selection of the best solution in the field of construction of means of transport does not differ at all from ving this problem in any other branch of national economy. n distinction from industrial enterprises, where calculations e usually made for a planned volume of production, in planning railroads one has to consider the gradual increase of the ume of future haulage and the necessity of further strengthen- (by stages) the planned road. In connection with this the blem of comparability of expenses expected at different es is especially important.

Those who draw up the plans calculate the cost of construction estimated prices, i.e. according to the norms of labor produc- ity, wages, prices and the norms of material expenditures es- lished for the current year. The expenses for exploitation are o determined according to rates established for the corre- nding year. But any expenditure has a lower economic signif- nce if it is made several years later. This is explained by fact that the productivity of labor in all branches of the na- hal economy is constantly increasing and prices on materials fuel are decreasing; the technological processes are improv- and consequently the cost of construction and exploitation is ng down.

To sum up the expenditures differing in time is possible only ase they are brought to one and the same level of evaluation, t of all to the level of the initial year. The well-known method reducing the expenditures on construction and exploitation de in different times to the initial moment of evaluation, ch consists of lowering the significance of the former expend- es by $(1 + p)^t$ times where "t" is the time between the ex- ditures and "p" the coefficient of annual effectiveness of capi- investments, in our opinion is quite correct. This method siders the process of lowering the significance of expendi- s with the time elapsed with the help of a diminishing geo- ric progression.

The method of compound interest for considering the uneven ne of expenditures made in different time was criticized by Mstislavsky and others. They accused the supporters of such ethod of calculation of using a formalistic-mathematical roach to the problem in alienation from the real economic cesses taking place in our country. They considered the use he geometric progression as an attempt to juggle the absurd ception of "spontaneous growth" of capital condemned by x.

The groundlessness of such a criticism is self-evident. The e idea of "spontaneous growth" of capital has no relation at o the given problem, because it is quite clear that the capital stments by themselves result in no savings, create neither profits nor economy. They arm the worker with a new, more advanced technique, securing the growth of productivity, making his labor easier; they further the increase in the physical volume of the output of production.

In drawing a project for railroads the selection of the best variant is greatly influenced by the natural features of the region through which the planned line has to pass: the relief of the terrain, the geological conditions, climate, presence of water. Therefore in comparing the variants of construction of certain railroad lines considerable attention is paid to the selection of track direction and to the placing of the permanent arrangements of transport, to the determination of the proper capacity of the water supply, etc. In these cases the economic calculations are accompanied by calculations connected with the consideration of changes in the terrain, the recurrence of high floods, etc.

An important specific trait of economic calculations of effectiveness in the field of transport is the necessity of considering the delivery speed of freight and passengers. It has been impossible to make such calculations so far because the scientific aspect of this problem has not yet been worked out.

The conception that "the more expensive the freight is, the more rapidly it should be transported" is circulating among some economists. But, one cannot say that the principle "more expensive — more rapidly transported" is sufficiently substantiated economically and logically. The value of the product and its significance for the national economy do not always coincide. Coal, iron ore, building materials, are of comparatively low value, but their significance for the national economy is very great. Could one assert that they should be transported slower than others? Generally speaking, all freight should be transported as rapidly as possible. In cases when arriving commodities are designed not for lengthy storage, but for immediate use, accelerating their transportation reflects on the time of circulation and in the end hastens the turnover of the means of circulation.

Of particular significance is the acceleration of the delivery of freight which is in shortage, and of freight serving to shorten the production processes of industrial enterprises. There is no doubt, of course, about the necessity of accelerating the delivery of perishable goods.

There are also other special problems without the solution of which one cannot proceed when planning capital construction in transport. But they can be completely solved only after the general problem of effectiveness of capital investment in the national economy of the USSR is solved.

A. Dodonov:

Accounting and the Determination of the Rate of Wear and Tear of the Basic Means of Production

The peculiarity of the basic means of production, just as of all the instruments of labor, is that, taking part in the process of production during a lengthy period of time, they preserve their natural form up to the end of their productive life. Gradually they transfer their value to the newly manufactured produce, and consequently after each process of production their wear and tear increases and their remaining value decreases. The wear and tear of basic means is not always proportional to their age, for it depends on the volume of work performed and a number of other facts. At the same time wear and tear of the basic means determines their efficiency, the time of their final quitting the ranks and the time for replacement. The data on the duration of wear and tear also are the basis for the determination of the norms of assignments for amortization and of the effectiveness of repairs, etc. All this shows the necessity of correctly calculating the wear and tear of the basic means and its great significance for the national economy.

But in the literature of economics and in practice the conception of wear and tear of the basic means and the conception of

amortization are confused. This was the result of the fact that up to 1938 there was no division of appropriations for amortization between the part intended for the restoration of the basic means and the part intended for capital repairs. In connection with this it is the practice to consider wear and tear of the basic means in the sum, equal to the appropriations for amortization, and later on to deduct the cost of capital repairs. Such order of charging wear and tear, in our opinion, does not reflect the real deterioration of the basic means and needs clarification.

It is known that the appropriations for amortization are the funds intended for the restoration of basic means and for capital repairs. Consequently, for the entire period of functioning of the basic funds, the sum of assignments for amortization should be equal to their original value plus the expected expenditures for repairs.* In other words, the sum of the assignments for amortization must be larger than the original value of the basic means by the amount of expenditures for capital repairs. If, for instance, the original value of a lathe was 10,000 rubles and the estimated expenditures on capital repairs 5,000 rubles, then the total sum of the appropriation for amortization for the entire period of functioning of the lathe should be 15,000 rubles (10,000 + 5,000).

In distinction from the appropriations for amortization the wear and tear of the basic funds reflects the degree of wearing out or decrease of the original value of the basic means in the process of functioning. Therefore the total sum of wearing out of the basic means cannot be more than their original value. The maximum of the loss which the value of instruments of labor (for instance, machines) can suffer in the process of labor, as was indicated by Marx "obviously is limited by the original amount of value with which they enter the process of labor..."† The situation is not changed at all if the norms of the appropriations for amortization took into consideration the "moral" wear and tear, because in this case too the basic means cannot transfer to the newly manufactured product more than their original value, and the transfer itself of this value has to be executed as evenly (in proportion to the work performed) as in the case of no "moral" depreciation, i.e. during the entire estimated period of time of functioning of the basic means. Thus, the wearing out of the basic means is less than the appropriations for amortization by the sum of expenditures for capital repairs and cannot be more than the original value of the basic means. Consequently, if a sum equal to the appropriation for amortization for wear and tear is charged, as it is the practice today, the result is that the index of depreciation will be higher than the actual wearing out of the basic means.‡

This condition is not changed by adjusting the depreciation of the basic means by the value of capital repairs performed. Actually, the capital repairs are made at the end of the cycle of repairs, which is from 3 to 12 years and longer, and consequently during this cycle the sum of charged depreciation does not undergo adjustments and is higher than the degree of actual wear wearing out of the basic means. Besides, one has to consider that the appropriations for amortization are also used for other purposes. For instance part of the appropriation for amortization, remaining free as a result of lowering the cost of capital repairs carried out by means of the resources of the enterprise, have to be transferred for financing capital investments. A number of ministries were authorized to apply part of the appropriations for capital repairs, which remained unused by January 1st 1953, to compensate the shortages in the circulating funds of enterprises and organizations within their jurisdiction. The ministers were authorized to redistribute the appropriations for amortization intended for capital repairs among various enterprises. The part of the appropriations for amortization intended for capital repairs but withdrawn in this manner amounted to 20 and more per cent. Because under such conditions, the deterioration of basic means was not diminished there could not be any conformity between the estimated sum of wearing out and the degree of actual deterioration even after the end of the cycle of repairs.

It is also necessary to consider that the actual cost of capital repairs may considerably deviate from the estimated cost and from the standards of established expenditures and the size of appropriations for amortization intended for capital repairs. Such deviations are unavoidable and under the existing system of calculation of wear and tear they will always influence its changes one way or another. Thus by January, 1956 there were the following deviations of actual expenditures for capital repairs compared with the size of appropriations for amortization and other sources of financing earmarked for that purpose (in millions of rubles; economy -; overexpenditure +):

Coal industry	+110.9
Oil industry	+ 14.1
Building materials industry	+ 4.2
Textile industry	- 17.1
Timber, Paper and Woodworking industries	+ 17.4
Meat and Milk industries	- 21.2
Fishing industry	+ 30.0
Electric power stations	+ 34.5
Light industry	- 10.1
Food industry of the Ukrainian SSR	- 11.1
Fuel industry of the RSFSR	- 3.6

It is quite obvious that all these deviations of the actual expenditures for capital repairs from their sources of financing correspondingly affect the changes one way or another of the deterioration of the basic means, calculated on the basis of the accounting data.

At the same time the degree of deterioration of the basic means determined on an accounting basis is affected by the write off of the expenditures for capital repairs at the expense of the deduction from the rent for the leased uninhabited premises, the receipts from the appropriations for amortization of other enterprises through redistribution and other sources of financing capital repairs (profits, appropriations from the budget, etc.). When receiving certain sums from these sources for financing capital repairs, depreciation is not charged. When they are utilized, as usual, then the depreciation of the basic means is decreased by the value of the capital repairs made. As a result, in some enterprises the depreciation may be completely written off, though this does not correspond to the actual situation. For instance, in the Podolsk region central food market of Kiev the expenditures for capital repairs made at the expense of extra sources of financing (above the appropriations for amortization intended for capital repairs) in 1950 were higher than the sum charged for depreciation of basic means by 73,000 rubles and in 1951 by 54,000 rubles. As a result of this a debit balance was formed ("red balance") in the account of depreciation of the basic means: on January 1st, 1951 amounting to 73,000 rubles and on January 1st, 1952, 127,000. In the balances of the Moscow, Batumi and Ishimbai oil refining plants depreciation has not existed since January 1st 1955, etc.

At present the wearing out of the means is considered apart from the individual responsibility of the enterprise as a whole. This to a considerable degree conceals the defects of the existing system of calculating the wearing out because the absence of depreciation and sometimes the presence of a "red balance" on many objects of basic means is exceeded by the total sum of depreciation in the enterprise. Especially often the absence of depreciation has a place in relation to the equipment, for after every capital repair (because of its high cost) the depreciation is lowered by a sum which not infrequently is higher than the original value of the equipment which was repaired. When such objects are liquidated, in spite of their normal functioning during the established time of life, a loss occurs for the sole reason that the entire sum of depreciation charged in the past was written off at the time of making capital reapirs. In other words, the loss from liquidating such objects occurs as the result of a wrong calculation of the depreciation and the over-expenditure of funds for capital repairs and not because of inadequate amortization. For instance, at the combine "Trekhgornaya Manufac-

* We do not consider here the value of materials obtained from dismantling and the expenditures connected with the liquidation of basic means.

† K. Marx, "Capital," Vol. I [of Russian edition], 1954.

‡ Here and elsewhere, we take for the actual wearing out the depreciation of basic means calculated by the norms of appropriations for amortization that have to be deposited with the special banks and are used for the restoration of basic means.

ra" the average time of functioning of the equipment was es-
mated on January 1st, 1955 as more than 50 years and was
nsiderably higher than its normal length of life. The depre-
ation of such equipment according to the established norms of
nortization should long ago have exceeded the original value, and
remaining value should be close to zero. Hence every year,
en this equipment is liquidated at this combine, a loss appears
ly because a considerable part of depreciation which was
arged in the past was written off at the time of performing
pital repairs (in 1953, according to the report, the depreciа-
n of equipment that was liquidated amounted to 65.1%; in
54 it was 76.5% and in 1955, 74.5%).

At the same time it is quite obvious that the sum of depreciа-
n of basic means now shown in the balances and consequently
e remaining value are far from corresponding to reality and
ould be made more precise. It would suffice to say that in the
terprises of the former USSR Ministry of the Coal Industry
h an average norm of yearly appropriations for amortization
4.2% the depreciation of the basic means, according to the
ances of January, 1955, amounted to only 3.3%. At the enter-
ses of the textile industry where there is much old equip-
nt, with the yearly appropriation for amortization amounting
6.5%, the depreciation of the basic means, according to the
ances by January 1st, 1955 was 12.5%. A similar situation
observed in the enterprises of other branches of industry.

All this testifies to the fact that there are defects in the exist-
system of accounting and determining the rate of depreciа-
n of the basic means and there is need for a change.

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t follows from the above that it is proper to calculate the
reciation of the basic means in the amount of appropriations
amortization which have to be deposited in the special banks
are intended for the restoration of the basic means. Besides
ieving the most exact determination of the actual wear and
r of the basic means this will allow shortening and simplifying
siderably the tally-sheet system of the current account on
reciation. In such case there is no need for decreasing the
reciation of basic means by the value of completed capital
airs.

owever the proposal on changing the existing method of cal-
ating the wear and tear of basic means and especially the
sal to decrease the depreciation of basic means by the ex-
ditures for capital repairs are met by a number of objec-
s. Many economists consider, wrongly, in our opinion, that
airs eliminate the wear and tear of the basic means and
then their life.

Under the existing method of accounting," writes P. Pavlov,
economic wearing out of the instruments of labor (the de-
e of loss of their value) is determined in the appropriations
amortization. The depreciation is decreased by the sum of
tal repairs. This is completely substantiated theoretically
practically. The capital repairs restore the physical wear
tear: the additional labor spent on capital repairs increases
remaining value of the utilized means of labor. Strictly
king the current repairs also restore the physical wear and
and increase the remaining value. But the expenditures of
r on this type of repairs enter completely into the annual
duction. Therefore it is not necessary to decrease the de-
iation of the basic funds by the sum of the current re-
s."*

specially miraculous power is attributed to capital repairs.
s P. Pavlov asserts that "partial restoration of basic funds
apital repairs prolongs the span of life of the instruments
bor."† L. Kantor believes that "the functioning time of the
c funds is determined by capital repairs which prolong the
period of exploitation of the equipment"‡ and that "the
e capital repairs that are made, the longer is the function-
ime of the basic funds."** Many other economists assert
that capital repairs eliminate wearing out and increase the remaining value of the basic means.

If one accepts these assertions then it would be true that the more a machine-tool underwent capital repairs, the higher its remaining value and the longer it could function; or on the contrary, the less a machine-tool underwent capital repairs, the lower its remaining value and the shorter its span of life. But practice shows the opposite, the more a machine-tool underwent capital repairs, the lower its value and the sooner its time for its liquidation. On the contrary, the less a machine-tool underwent repairs, the higher its value and span of work-potential. Where there is proper maintenance of the equipment and the rules of operation are observed, the periods between repairs are considerably longer if the equipment is in good condition; and where the care of equipment is not good and the rules of operation are not observed, it demands more frequent repairs and becomes useless before the estimated time.

The foremost workers systematically prolong the periods between equipment repairs. But hardly anybody would assert that they are working for the sake of "wear and tear" so to speak, especially because the condition of such equipment is particularly thoroughly controlled. Yet the existing system of calculation and accounting of depreciation of the basic means leads exactly to such a conclusion, which can be seen from the following example. Suppose there are two lathes in the shop with a 10-year term of estimated work. The original value of each lathe is 20,000 rubles and the estimated expenditures for capital repairs for the functioning time is 10,000 rubles. Considering two-year repair cycles, the capital repairs of these lathes should be carried out after two, four, six and eight years' use. The expenditures for each of the repairs are estimated at 2,500 rubles (10:4). Suppose further that for one of the lathes the periods between repairs were lengthened and consequently the repairs were made only twice — after four and eight years' use. On the other lathe, as the result of bad care and the violation of operating rules, the capital repairs were carried out annually. Consequently, the dynamics of depreciation of each of these lathes, according to the existing method of calculation, will be characterized by the following data (in thousands of rubles):

on 1st lathe							
years of exploitation	original value	Sum of appropriation for amortization			expenditures on capital repairs	Wear and tear	remaining value
		for restoration	for capital repairs	total			
1st	20	2	1	3	—	3	17
2nd	20	4	2	6	—	3 + 3 = 6	14
3rd	20	6	3	9	—	6 + 3 = 9	11
4th	20	8	4	12	—	9 + 3 = 12	8
5th	20	10	5	15	2.5	12 + 3 - 2.5 = 12.5	7.5
6th	20	12	6	18	—	12.5 + 3 = 15.5	4.5
7th	20	14	7	21	—	15.5 + 3 = 18.5	1.5
8th	20	16	8	24	—	18.5 + 3 = 21.5	-1.5
9th	20	18	9	27	2.5	21.5 + 3 - 2.5 = 22	-2
10th	20	20	10	30	—	22 + 3 = 25	-5

[See also chart next page.]

From these data one can see that in accordance with the existing method of calculation the complete wearing out of the first lathe, for which the periods between repairs were increased, occurred in the eighth year of its life, and its deterioration proved to be more than normal, while as a matter of fact this lathe continued to work normally and still will be functioning after the expiration of 10 years, i.e., the time of its normal operation. Contrary to this, for the second lathe, which was repaired every year, the wear and tear for the 10 years of its functioning amounted to only 50% and so was considerably lower than the normal time for complete depreciation, though probably,

Pavlov. "Wear and Tear and Amortization of Basic
ls," 1957. State Finance Publishing House, p. 121.
d., p. 220.
M. Kantor. "Amortization and Repairs in the Industry of
USSR," 1949. State Finance Publishing House, p. 39.
ollection "Amortization in the Industry of the USSR," 1956.
Finance Publishing House, p. 54.

on 2nd lathe							
years of exploitation	original value	Sum of appropriation for amortization: for restoration	Sum of appropriation for amortization: for capital repairs	Sum of appropriation for amortization: total	expenditures on capital repairs	Wear and tear	remaining value
1st	20	2	1	3	—	3	17.0
2nd	20	4	2	6	2.5	3 + 3 - 2.5 = 3.5	16.5
3rd	20	6	3	9	2.5	3.5 + 3 - 2.5 = 4.0	16.0
4th	20	8	4	12	2.5	4 + 3 - 2.5 = 4.5	15.5
5th	20	10	5	15	2.5	4.5 + 3 - 2.5 = 5.0	15.0
6th	20	12	6	18	2.5	5 + 3 - 2.5 = 5.5	14.5
7th	20	14	7	21	2.5	5.5 + 3 - 2.5 = 6.0	14.0
8th	20	16	8	24	2.5	6 + 3 - 2.5 = 6.5	13.5
9th	20	18	9	27	2.5	6.5 + 3 - 2.5 = 7.0	13.0
10th	20	20	10	30	2.5	7.0 + 3 = 10.0	10.0

it is not good any longer for further use and has to be liquidated.

Strictly speaking, decreasing the depreciation by the sum of expenditures for capital repairs, while the basic means are functioning for a normal time, is no more than a corrective to the excessive, previously charged sum of deterioration, corresponding to the amount of appropriations for amortization intended for capital repairs. Thus, if the original value of the lathe is 10,000 rubles, and the estimated expenditures for capital repairs is 5,000 rubles, then the total sum of appropriations for amortization for the entire functioning period of the lathe will be 15,000 rubles. It is obvious that the value transmitted by the lathe to the product cannot be more than 10,000 rubles. But under the existing practice of calculating, the deterioration is conditionally charged to the sum of 15,000 and after the capital repairs, is corrected and is decreased by the sum of expenditures for these repairs.

Thus although each separate case of capital repairs of basic means is accompanied by a decrease in their wearing out, as a matter of fact this decrease is nothing else but a corrective of the excessively charged sum of deterioration, corresponding to the amount of appropriations for amortization intended for capital repairs, but no actual decrease of depreciation of the basic means occurs in this case. Because the moment of charges made for amortization and depreciation of the basic means does not coincide with the moment of capital repairs some sort of fetishism of capital repairs arises: outwardly it looks as if the capital repairs decrease the depreciation of the basic means.

The assertions that capital repairs eliminate depreciation of the basic means and prolong the time of their functioning, are the result of a wrong interpretation of the purpose of repairs. Repairs do not restore the physical wearing out and do not prolong the span of life of the basic means, but only secure their normal functioning. Therefore one has to strictly discern the expenditures for repairs and for the actual wearing out of the basic means.

In our industry the compensation for the deprecation of basic means and for the expenditures on capital repairs is included in the total norms of appropriations for amortization. Therefore an impression is created that the entire sum of appropriations for amortization expresses the wearing out of the basic means, and the expenditures for capital repairs made at the expense of these appropriations for amortization supposedly make up for the depreciation. Some economists (for example G. I. Ozerov) therefore even came to the conclusion that in the value of the instruments of labor should be included not only their original value but also the average (social) value of capital repairs during the entire functioning period.

Adding the expenditures on repairs to the original value of the basic means results in distorting the indices of registration of the amount of basic funds, their remaining value and depreciation. Analyzing the data on capital repairs, P. Pavlov arrives at the conclusion that "at the expense of the accomplished capital repairs alone the value of the basic funds of the national economy is increased annually from 2.2 to 5.9%, and on auto transport - 14.4%."* Thus, capital repairs turned into an additional source of increasing the basic means, which does not correspond with reality. With the same success one could say that the expenditures on current repairs, surpassing several times the expenditures on capital repairs, also increase the value of basic means of the national economy.

S. Schenkov, speaking on the necessity of increasing the residual value of the basic means by the sum of expenditures not only on capital, but also on current repairs, referred to the calculations of F. Engels, found in his letter of March 4, 1858 to Marx. † In his calculations Engels added, indeed, the expenditures on repairs to the residual value of the mechanical equipment. But Engels, in this letter, did not indicate that repairs decrease the wearing out of the machines; just the contrary, he stressed that the average span of life of machines is 10 to 12 years, after which time they are replaced by new ones. Engels included in the annual expenses of production a certain percentage for the wear and tear from the original value of the equipment and separately from the expenditures on repairs. With such a calculation the expenditures on repairs did not affect the degree of wearing out of machines (the latter was determined on the basis of the percentage of amortization and calculated without considering the expenditures on repairs).

The expenditures on repairs of basic means (capital or current) are designed to secure the normal functioning of the basic means up to the moment of their complete wearing out, and therefore they are included in the current expenditures on production (in case current repairs are performed) or are written off at the expense of appropriations for amortization for capital repairs (in case capital repairs are made) and consequently cannot affect the change in either the original or in the residual value of the basic means or the extent of their wearing out.

One also cannot agree with the assertion of P. Pavlov that capital repairs prolong the span of life of the instruments of labor and allow the machine building industry to work most of the time not for restoration, but for reproduction on a large scale, in connection with which "capital repairs are a necessary link in the process of reproduction of the basic funds on a large scale."‡ The expenditures on the repairs of the basic means (current, as well as capital) basically are expenses for preservation and not restoration (here we are abstracting from work on modernization). If there were no repairs of existing equipment, then the machine-building industry would spend considerably more time not for reproduction on a large scale, but for the simple reproduction of the equipment which would quit the ranks before the established time, and the national economy would incur colossal losses from the premature liquidation of the basic means. Therefore the repairs are an element not of reproduction on a large scale, but of simple reproduction, and this is true even relatively, because repairs do not reproduce the basic means, but only keep them in active condition for the entire estimated period of their functioning.

In practice the expenditures on repairs usually are included in the general norms of appropriations for amortization, in connection with which the latter considerably surpass the amount of actually transferred value of instruments of labor, and the impression is created outwardly that the repairs prolong the time of their functioning. Thus, with a span of life of a machine of 15 years the norm of appropriations for amortization (considering expenditures on repairs) is established, for instance, at 10%, instead of 6 2/3% of its actual depreciation. As a result, an impression is created that the machine wears out in 10 years instead of 15, and for the remaining five years it exists as if it were due to the repairs.

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* P. Pavlov. "Wear and Tear and Amortization of Basic Funds," p. 240.

† See the Collection "Problems of Soviet Finances," 1956, pp. 164-165.

‡ P. Pavlov. "Wear and Tear and Amortization of Basic Funds," p. 220

Those economists who assert that repairs eliminate the wear d tear of basic means and prolong their life span often con- se the work on repairing the parts and details of various ob- cts of basic means with the work of replacing those parts and tails by new ones. However repairs are basically connected th boring, scraping off, fusing and other types of work for re- iring the same parts and details in order to secure the nor- l work of the whole aggregate. During the repairs, the re- acement of some parts of the machine, certainly may take ace, but this does not eliminate the physical depreciation of machine as a whole. If in some cases repairs are interlaced th restoration, as for instance, in railroad transport, this pens rather seldom. Thus, in the automobile repair shops Moscow the value of new spare parts in capital repairs of chines amounts to no more than 5-7% of their original value d 25-30% of the cost of work performed. Therefore it is not chance that the norm of the run of the cars in the period be- en the repairs after their capital repairs is shortened by -25%. In case of repairs of lathes the role of new spare parts d for these repairs is still smaller.

At the same time one also has to consider that as a result of lack of a sufficient amount of new equipment sometimes chines are repaired which would be written off and scrapped he situation with respect to the available equipment were s acute. Naturally, in such cases the capital repairs become storation." But this cannot change the basic purpose of re- r work designed to secure the normal functioning of basic ans and not their restoration.

The proper calculation of wear and tear has an important role determining the residual value and the degree of depreciation he basic means as well as revealing the results of their idation. A considerable role is played in this case by the of differential norms of appropriations for amortization, ause the use of average norms of such appropriations un- idably result in a distortion of the degree of depreciation he case of liquidation or transfer of the basic means to other erprises. As a matter of fact the average norm of appropri- ns for amortization (even in the part used for the restora- of basic means) does not reflect the actual transfer of the e of basic means to the product. Therefore, when calculat- depreciation in case of liquidation or transfer of some cts of the basic means and using the average norms of ap- priations for amortization, deviations in one way or another unavoidable. Thus suppose that the annual depreciation of ic means of group "A," the value of which is 10,000 rubles, basic means of group "B," the value of which is 20,000 es, amounts respectively to 7% and 4%, with the average m of appropriations for amortization liable to be deposited e special bank being 5%. Let us further suppose that after expiration of six years the basic means of group "A" have e transferred to another enterprise or liquidated on account ge and of wear and tear. The depreciation of these basic ns, calculated on the basis of the average norm of appropri- ns for amortization, would be $\frac{10,000 \times 5 \times 6}{100} = 3,000$ rubles, e the actual depreciation would be $\frac{10,000 \times 7 \times 6}{100} = 4,200$ es. Consequently writing off the depreciation of these basic ns on the basis of average norms of appropriations for rtization would result in a distortion of the index of depre- on of the remaining basic means and the sum of the fixed of the enterprise. In practice such occurrences are not unique and their elimination has considerable importance.

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Finally, it is necessary to discuss the proposals for changing the method of making entries in current accounting, relating to the amortization and depreciation of basic means.

At present when charging amortization and depreciation of the basic means the following entries are made in the current accounts: the sum of appropriations for amortization is entered in the debit of the account of expenditures (expenses of shops and of the entire enterprise, etc.) and the account of amortization is credited; at the same time the same sum is debited into the account of the fixed fund and is credited to the account of depreciation of basic means. Some authors of works on accounting (A. Margulis, E. Gleich, S. Schenkov and others) consider the scheme of bookkeeping described above as not quite correct and propose to replace it by the following entries to the current accounts: to debit the account of expenditures (by shops and for the entire enterprise) by the sum of appropriations for amortization, and to credit the account of the depreciation of the basic means, and at the same time to debit the account of fixed fund, and to credit the account of amortization fund. In their opinion, such a scheme of entries is economically better substantiated because in the expenditures is included the value of depreciation of the basic means and not the value of amortization. But actually the authors consider the deterioration of basic means equal to the appropriations for amortization, the result of which is confusion of the concepts of depreciation of basic means and amortization.

It would be possible, of course, to include in the expenditures on production first the deterioration of the basic means and after that to include separately the appropriations for amortization, intended for repairs. After that the sum of appropriations for amortization, designed to be used for restoration ("renovation") of basic means, is debited to the account of fixed fund and credited to the account of amortization fund. But this would only make the technique of accounting more complicated, because it would require making entries into the accounts of expenditures and the amortization fund twice. At the same time it would be necessary, while calculating the cost of production, to divide (without really being necessary) the general item "amortization" in two — the depreciation of basic means and appropriations for amortization intended for capital repairs.

It is also necessary to consider that the appropriations for amortization are determined under the present practice in a total sum of funds used for the restoration of basic means and for capital repairs. In this connection the depreciation of the basic means enters as a component part in the total sum of appropriations for amortization and as such is included in the expenditures of production. Consequently, the assertion that we include in the expenses of production the depreciation of basic means and not the amortization, does not correspond to the real situation. At the same time it contradicts the "basic rules of planning, accounting and calculating the cost of industrial production" where amortization, and not depreciation of the basic means is considered as one of the elements of the expenses of production.

Therefore, in our opinion, there is no necessity whatsoever to change the bookkeeping entries on amortization and depreciation of basic means. The existing scheme of entries of the indicated operations is economically correct and needs only a certain precision in determining the degree of depreciation of the basic means.

D. Kondrashov:

A Book About the Amortization of Basic Funds

P. PAVLOV. "Wear and Tear and the Amortization of Basic Funds." Editor: Professor A. A. Arakelian. State Finance Publishing House, 1957, 319 pages.

The book under review is addressed to a broad circle of economists and practical workers in different branches of the national economy. Its publication is timely, especially in connection with the measures taken by the government to improve the norms of amortization and evaluation of the basic funds, as well as for intensifying the rise of value as a lever in economic practice for control over the economic aspect of the activity of different enterprises.

The work of P. Pavlov is divided into four chapters. The first chapter is devoted to the economic nature of the basic funds of production and to the peculiarities of their circulation, to the structure of the basic funds in different branches of the national economy and to the placement of basic funds in economic regions of the country.

In the second chapter the interdependence of the use of the basic funds and their reproduction is discussed; the notion of physical wear (economic depreciation) of the basic funds is explained and the question of moral depreciation is considered.

In the next, the third, chapter the author investigates the economic nature and the significance for the national economy of the amortization of the basic funds and formulates the principles of determining the norms of amortization in the socialist national economy.

The last chapter is dedicated to the problems of capital repairs and of modernization.

In the work under review a large circle of problems of amortization and repairs is examined and proposals are made on the main directions in which theory and practice in this field should develop.

First of all the book clarifies the role which the funds of production play in the process of production. It is stated that the material representatives of the funds of production are only those means of production which take part in the process of production. Therefore the author does not consider as funds of production the machines, raw material, and fuel kept stored in the warehouse. This is as it should be. But one cannot agree with the opinion of P. Pavlov that if such commodities are on the way, being transported, they could not be considered as funds of production (page 9). It is true that for the enterprise which manufactured and shipped the means of production they are not reserve for production, but it is hardly correct to consider that they are not such for the enterprise which purchased them and to whose address they are shipped, especially if they already were paid for.

At the same time one should consider as correct the assertion of P. Pavlov that only such instruments of labor, raw material and fuel belong to the funds of production which have a strictly definite assignment: to replace the means of production which cannot be used any longer.

The question of reserves of production is very important in practice because accumulation of excessive reserves and of a shortage of means of production do harm to the economy. Funds, which are immobilized in one enterprise, cannot be used in another because of the detachment of the units of economy. Owing to the shortage in reserves of means of production a hitch may occur in a given enterprise. It means that the turnover of the funds should be normal in every enterprise. The obsolete means of production should be replaced by new one gradually. Unfortunately, the author does not draw from these theses the proper conclusion that the material-technical supply should be improved. But experience shows that the norms of reserves for production, for which every enterprise receives a strictly fixed sum of money, cannot be established out of touch with the specific conditions of the material-technical supply.

P. Pavlov writes that the basic funds are "such means of production of the socialist society which, being in the process of labor, are utilized gradually during several cycles of production, partly transferring their value to the manufactured product; therefore their value in the manufactured product in the given cycle of production is partly compensated and enters circulation at each given moment in parts" (page 15). Then the author draws the conclusion from the thesis of K. Marx that the basic funds are a part of the funds of production, the material representatives of which, once they enter the sphere of production, never leave it, that the equipment of an enterprise which is closed for a time, as well as equipment which was dismantled, loses its capacity as part of the basic funds; from funds of production such equipment becomes reserves of production or simply is immobilized. But unfortunately the borderline between funds of production and reserve funds is not indicated in the book either for basic funds or for circulating funds. Yet not every temporary closing of an enterprise justifies the exclusion of its means of production from the basic and circulating funds of production of the national economy. For instance, does the temporary closing of an enterprise, say, in connection with the shortage of agricultural raw-material, resulting from a crop failure, decrease the basic funds for production of the national economy?

The definition of basic funds given by P. Pavlov needs to be made more exact. For instance, the words "are used gradually" draw together the basic and circulating funds. In the usual understanding the circulating funds are also used gradually, i.e. when needed in the process of production. Obviously, the gradualness of use cannot be the exclusive characteristic of basic funds. The formulation of "several" cycles of production because some branches of light industry use the basic funds in many cycles of production is not quite correct. It would be more correct to say that the basic funds serve production during many of its cycles.

In the book certain interesting data on the relation between the basic and circulating funds in industry (by principal branches) on construction and on transport are cited. The author explains why the role of basic funds may be big or small. But one cannot agree with all of his explanations. For instance, the important role played by the circulating funds in construction (on construction of enterprises of metallurgical and chemical industries the circulating funds are 4.4% while the basic funds are 75.6%) P. Pavlov explains in the following words: "in the branches of the construction industry there are no surpluses of building materials ... " (page 26). This is not always so. It is known that exactly the limited amount of building materials is one of the basic causes of the nonfulfillment of construction plans. The author did not prove that the circulating funds, constituting only one-fourth of the total funds of production, are excessively high.

The analysis of the figures characterizing the structure of the basic funds in agriculture, building industry, transport and trade allowed the author to draw the conclusion that the composition of the basic funds is determined by the role played in the total process of reproduction by different branches of industry, by the level of development of technique and technology, by the type of production, by the degree of mechanization of labor and also by the social form of production.

The basic funds, in the opinion of the author, have a value. This is determined by the production of commodities in the USSR. P. Pavlov believes that the conception according to which only the goods of consumption represent commodities and have value is groundless. He ascertains that our monetary valuation of basic funds as a rule is lower than their actual value and lower than the social expenditures on producing them (pp. 81,82). But the author does not make clear what is his opinion on how the means of production should be priced. On page 82 he writes

at the existing mechanism of prices results in "pumping er" funds from branches producing machines and equipment o branches producing consumers goods. But P. Pavlov does t say if this is good or bad. He only reveals the mechanism this "pumping over." Certain questions are not developed, ch as: how can prices on the means of production under so- lism be established below values; what are the limits for the viation of prices of the means of production from their values, e the prices of commodities of both departments of social oduction higher or lower than their values. But clearing up se questions is very important for the current solution of problem of pricing the basic funds and determining their ortization.

n the book the great importance of the correct evaluation of basic funds is stressed. This is natural. Without a correct luation one cannot calculate the norm of amortization on h type of basic funds.

Clearly, the realization on a national scale of such a measure the reappraisal of the basic funds leads to a great expendi- e of means in order to get more substantial economic re- ts. At this point the question arises: what would the society out of this expensive measure? Apparently, the question is only a matter of perfecting accounting, but also of strength- ng financial discipline in the field of using appropriations amortization.

'o answer this question, first of all the problem of a better thod of using the basic funds in the process of socialist re- duction is examined.

'. Pavlov considers, and quite rightly, that the most impor- t factor in improving the utilization of instruments of labor n perfecting the methods of managing enterprises. In better organization of economic accounting, of the pay- t for labor, of determining prices, etc., considerable re- ves for the more complete utilization of the basic funds are e found.

'hen examining the problem of the influence of utilization of c funds on their reproduction, P. Pavlov discusses the stions of physical and moral depreciation of the basic funds the methods of replacing the basic funds used. The author ts out that physical wear and tear is a result of the gradual of use-value by some elements of the basic means. The larity of this process is investigated by the technical branch- f science. Wear and tear, or the economic depreciation, process of transferring the social labor embodied in the c funds (value), to the fabricated product along with the loss e use-value of these funds. This process is studied by omics.

l the basic funds are liable to physical wear and tear, those se and those idle; while actual wear out occurs only during productive consumption of the basic funds, the value of h is compensated in the fabricated product.

e economic wear and tear of the basic funds is measured e sum of appropriations for amortization. The author con- rs as correct the idea that wear out is decreased by the sum t on capital repairs. The labor spent on capital repairs of asic funds increases their residual value.

mrade Pavlov considers as one of the causes of distortion e original evaluation of the basic funds wrong norms of tization and the absence of differentiated norms of amorti- n for different basic funds. Here he draws the conclusion in some branches of industry the coefficient of wear and is very high, and that requires intensive repairs.

r economy has to possess sufficient sources for capital re- , for modernization and timely replacement (renovation) e basic funds. In connection with this the book recommends r norms of amortization. But at the same time the limits e utilization of the funds for amortization by self-sustain- nterprises should be found. At present the resources for al construction are drawn in the necessary amount from udget or from the profits after the sums for amortization nulated by the enterprise are deducted. The enterprises t have sufficient interest in forming funds for amortization. und of amortization in the part used for renovation, as a r of fact, is deprived of individuality in the Prombank strial Bank] and for the enterprises it is a matter of in- ence where they receive the funds from — from the amortization fund, from the profits or from the budget. Obviously it is necessary to think about fixing the appropriations for amortization specifically for capital construction. Until proper measures are taken this fund must remain deposited in the Prombank.

In the book two forms of moral wear and tear of the basic funds are examined in detail: 1) the result of lowering the cost of production of machines similar to those in operation; 2) the result of the construction of new, more economical and more productive machines. The author is quite right when he considers that the material basis of the moral wear and tear is the development of technique. Under conditions of technical progress, the means of production, as a rule, are renovated (replaced) not in their original form, but in the form of new, more perfect machines. After having shown in detail the manifestations of the moral wear and tear in different branches of industry (machine-building, the building industry, shipbuilding) P. Pavlov came to the conclusion that the planned development of technique under socialism demands a thorough consideration of the economic effectiveness of the introduction into production of every new type of machine. This conclusion is quite correct and timely if one keeps in mind that in practice many cases of neglect of this requirement are observed.

The author's examination of the method of calculating the amortization norms is especially interesting.

As it is known, for a long time it was considered that amortization must provide for only simple reproduction. Referring to the theses of Marx, the author asserts that in light of their role in the national economy the appropriations for amortization are nothing else but the monetary expression of that part of the value of the basic funds which is intended for the renovation of the basic funds on a new technical basis (page 167).

P. Pavlov severely criticizes contemporary bourgeois political economy which does not recognize the objective character of amortization. In capitalist enterprises the amount charged to the amortization account often is determined by the amount of profit: if the profit is high, then in order to represent it as lower and thereby to confuse the fiscal organs, the norm of amortization is shown greater; and if the profit is low, and it is desired to show a fair financial position of the enterprise the amount charged for amortization is shown lower. The author discusses the methods of amortization existing in the US: the proportional method, the method of "declining residue" (regressive) and the method of "the sum of annual figures" (cumulative).

In capitalist countries the amortization fund has become in recent times a basic source of financing investments. For instance, in Western Germany and in France the actual writing off through amortization surpasses many times the real wear and tear of the instruments of labor. Consequently, a considerable part of profits is transferred into the amortization account and thereby is hidden from taxation.

In the Soviet Union, writes the author, there is objectively an average amount of wear and tear of every element of the basic production funds. The norms of amortization have to correspond to these average amounts. But so far not enough attention is paid to the working out of correct norms of amortization. The norms of amortization now in use sometimes do not even cover by way of the appropriations for amortization either the value of liquidated means of production or the needs in funds for capital repairs. For instance, in 1955 the shortage of the sums for amortization amounted to two per cent of the total sum of basic funds in the coal industry; to 3.2% in the building industry and to 0.9% in the state farms. Whereas under normal conditions the appropriations for amortization should be higher than the value of the eliminated basic funds and the cost of capital repairs. All this indicates that it is necessary to establish new and higher norms of amortization.

The author is quite right when he poses the question of differentiating norms by types of basic funds because, although the general rates secure to the state the necessary amount of appropriations for amortization, the cost of production is distorted, for the appropriations do not express the value of the wear and tear in terms of the different instruments of labor used in the production of given types of product.

P. Pavlov considers it necessary to adjust the general formula

of calculating the annual norms of amortization so that the moral wear and tear as well as the changes in the cost of repairs of the machines can be accounted for. In his opinion it would be useful to charge the amortization of machines and equipment according to the evaluation of the "restoration value" of the current year. But the question arises: would this not demand excessive work in annually revising the value of instruments of labor acquired in previous years and as a rule valued more in the prices of the current year? And then another question: how can the tempo of restoring the basic funds be determined and what should be the basis for determining the total moral wear and tear?

One has to say that the generally correct line of solving the problem of amortization of the basic funds is complicated in the book. In particular, we think it possible to consider the changes in the value of the basic funds not by converting them annually into the restoration value, but by taking into consideration the difference in the norm of amortization. One cannot ignore that the amortization accounting proposed by the author could be useful only if definite types of expenditures by enterprises from appropriations for amortization were strictly fixed.

When discussing the economic meaning of repair work, P. Pavlov correctly observes that in practice "very often repair work is treated as a secondary type of production" (page 234). This follows from the wide-spread opinion that repairs are only a condition of simple reproduction of the basic funds.

Then the types of capital repairs (current and capital) and the nomenclature of the most characteristic repairs are examined. The author points out that in the existing regulations concerning the planned, precautionary repairs there is no precise classification of the kinds of repairs and no clear borderline between the repairs as such and the restoration of the basic funds. It is necessary to define the economic border between current and capital repairs, between the expenditures from the fund for amortization and from the resources of basic production; sometimes as the result of shortage in circulating funds the current repairs are paid from the amortization account, while the capital repairs are realized from the account of the circulating funds.

In the book some interesting data on the relation of expenditures for capital and for current repairs are given. The author draws the conclusion that along with the development of industry the proportion of expenditures on current repairs is decreasing quicker than the proportion of expenditures on capital repairs. But because the causes of this phenomena are not revealed the conclusions of the author are not convincing.

Examining the development of the system of specialized and centralized repairs and pointing out the existing defects in this field resulting in transporting the machines and equipment over thousands of kilometers, because there are no repair shops in many regions, P. Pavlov poses the question of creating specialized repair enterprises rationally placed in different economic regions.

Comrade Pavlov speaks of determining an economically reasonable limit for capital repairs and calls into question the value of repairs in some cases on certain types of equipment. For instance, in the Leningrad shipbuilding yard 40,000 rubles was spent for capital repairs of two lathes while the price of each new lathe was only 15,000 rubles. This example is not unique, and the author draws the correct conclusion that: if the repairs are more expensive than replacement by new instruments of labor, such a repair is economically unjustifiable. Thus, the problem is to increase the output of new machines and to replace the used machines.

Generalizing the experience of the foremost enterprises, P. Pavlov draws the conclusion that through modernization of machines enormous reserves could be revealed in industry which in many cases would make it unnecessary for the enterprises to make any large capital investments. In this connection the inadequate scale of modernization of the equipment is rightly noted. For instance, annual modernization of metal-cutting lathes amounts only to 1.3% of the total, while it is feasible to modernize 2-5% of them.

The author tries to trace a reasonable limit for modernization. In his opinion, the modernization of equipment is economically advantageous when it secures not only a lower amortization, but also lower expenditures per unit of product.

P. Pavlov accomplished a considerable and useful task on a problem which has an important bearing on the national economy. His practical suggestions will help to improve the standardization of amortization and its transformation into a factor for the further development of socialist production.

Y. Koldomasov:

The Influence of Transportation on the Geographic Distribution of Industry

E. D. Khanukov: "Transportation and the Location of Production," 1956, pp. 412.

In the Soviet Union, with its enormous territory, transportation exerts great and often decisive influence on the geographic distribution of new industrial enterprises and the specialization of existing ones, and consequently on the level of the productivity of social labor.

The most complex methodological problem which inevitably arises in planning the geographic placing of new industrial enterprises is the method of calculating the expenditures on transport for determining the cost of production in the regions of consumption and the capital investments made in the development of the hauling capacity of transport. The role of these calculations is growing with the increase in the scale of economic construction and progress in the development of the productive forces in the Eastern regions of the USSR, and the extension of the rights of the Union Republics, including the field of planning the location of productive forces. These problems acquired particular meaning in the light of the decisions of the plenary session of the Central Committee of the CPSU held in December of 1956. This plenum advanced the idea of a profound technico-economic substantiation of the construction and placing of new industrial objects. In accordance with the decision of the February (1957) plenum of the CC of the CPSU a radical reorganization of the management of industry and construction was accomplished.

In the foreword to the book the author writes that the purpose of the book under review is to investigate the character of the interrelations between transportation and the placing of industry, and to show the role of transport and the methods for taking transportation into account as a factor in placing industry in the USSR. He analyzes the role of transport in the placing of the productive forces "mainly in connection with the problem of liquidating irrational haulage and lowering the relative amount of expenditures of the national economy for transportation."

A great number of problems are discussed in this book and a number of proposals for improving the methodology of planning the location of productive forces are advanced in organic interconnection with the problem of the development and use of transportation.

In the first section of the book the author gives a short account of the contemporary distribution of capitalist production. He shows the influence of transport in placing production in the capitalist countries and cites examples of the profound contradictions and unevenness of the distribution of capitalist production and the resulting irrational transportation system.

Analyzing the relations between the tariff rates, the expenditures of the railroads and the social expenditures for the haulage of freight, and investigating the influence of railroad tariffs on the placing of industry and agriculture in capitalist countries, E. Khanukov shows that exceptional tariffs and the principle of so-called "equal opportunities" are used when establishing tariffs in the interests of big capital, which receives additional opportunities for expanding markets to dispose of its production and for suppressing small producers. At the same time he points out that the tariffs on capitalist transportation do not reflect the actual haulage expenses and that the differentiation of these tariffs by types of freight is based not on the real value of the transportation, but mainly on the value of the goods to be transported. Thus the thesis of Marx is confirmed that the railroad magnates establish tariffs on different commodities in direct

oportion to their value, considering that the relative part of e value which is added to the commodity by transport exnses is inversely proportional to the value of the commodity. In the second section of the book, "Transportation and the cation of Production in a Socialist Economy," a great amount material is systematized and critically analyzed by the au-r. In particular the factors determining the cost of transrtation are examined. E. Khanukov introduces statistical marials on the average cost of the transportation of passengers d freight on various railroads; shows the methods of calculat- the cost of certain types of freight; analyzes the rates for calculation of the haulage cost of different types of freight, nsidering the distance of transportation; and also reveals the pendence of the cost of transportation on the season of the ar.

The author rightly indicates that it is necessary to improve stematically the system of forming wholesale prices and iffs for freight in order that eventually they will reflect more ctly the social expenditures on production and on transport. Comrade Khanukov writes that in solving the problems conted with the territorial distribution of production "prefere should be given to variants involved in placing enterprises ich require the minimum expenditures of social labor on the duction and transportation of the product, i.e., secure the hest productivity of labor" (page 105).

n order to analyze the book under review in detail, let us cuss the following: the method of calculating transport exses when planning the placing of new industrial enterprises; evaluation of the economic effectiveness and the spheres of ization of different types of transport in connection with the ection of the location for new enterprises; and the questions rationalization of freight haulage of some important branches ndustry.

t is well-known that railroad transportation is the most imtant type of transport in our country. In 1956 its turnover ched 1,079 billion ton-kilometers. One should point out that total volume of transportation of freight on the railroads of the countries of the world in 1955 was 1,672 billion ton-kileters. But the length of the railroads of all the countries of world (without the USSR) is 1,165,000 kilometers, while the th of the railroads of the USSR is only a little more than 000 kilometers. The freight turnover of the roads of the R by 1960 will be almost equal to the present-day freight over of the railroads of all the countries of the world. With a scale of freight haulage one of the necessary conditions the all-sided economic substantiation of placing new indusl enterprises is the fullest consideration of capital investts needed for the development of transport and for the exes connected with the shipments of raw materials, fuel and r materials, as well as for the delivery of the manufactured ducts to regions where these products are consumed.

t present, as the result of the lack of a uniform method the ning organizations are using different approaches to the no-economic justification of the selection of locations for ing new industrial enterprises. The tariff or the cost of sportation is used as the basis of calculations (the total or, nding on the traffic, the average for the network or section, olume of transportation work in ton-kilometers, etc.). e author comes to the conclusion that in comparative eoc calculations and in selecting the most suitable variants basis for placing new enterprises, one has to consider not ost of haulage, but the actual prices of fuel, various mals and equipment; one should keep in mind also the preng tariffs. At the same time he stresses the necessity of idering the expenses of transportation for the delivery not of the raw materials and manufactured goods, but also of freight (foodstuffs, industrial goods for the population, or heating the dwellings and common cultural establishs, etc.). In cases where the expenditures of transport play pecially important role in selecting the location for the ed enterprise, E. Khanukov recommends adding to the calion of transport expenditures according to the acting tarthe calculation of the amount of such expenditures accordthe indices of the total cost of haulage in order to con- more precisely the individual expenses on transport on the of different variants of placing the enterprises. In his opinion, in such cases one has to consider the cost of haulage per section and the direction of the movement (with freight or empty), as well as the size of the shipment (small, by car-load or by express train).

At the same time, in order to have a correct evaluation of the use of transport when placing enterprises, the author considers it necessary also to have, along with the indices of the total cost of haulage, the indices of the expenses which depend only on the traffic, for "in many cases they facilitate considerably the selection of the variant which is the most advantageous from the point of view of the national economy" (page 402).

Thus for the calculation of transportation expenses and for the correct evaluation of different variants of the use of transport when placing new industrial enterprises the planning organizations must also have, along with the tariffs, the indices of the total cost of haulage of different types of freight on various sections of the network and in different directions, as well as the indices of the expenses which depend on the traffic or the indices of occasional additional expenses, and the data on capital investments on different types of transport.

E. Khanukov investigates the problem, important for the national economy, of how to decrease the unproductive runs (with empty cars) of rolling stock in placing new industrial enterprises. He underlines that "because the haulage of freight in the direction in which empty cars are moved is considerably cheaper for the national economy than haulage in the direction of the regular movement of freight sometimes it is rational to allow shipping over a longer distance in the direction of empties than to ship a shorter distance along heavily loaded lines, independent of whether or not there is special discount from the acting tariffs for shipment in the direction where empty cars are moved" (page 389).

Apparently E. Khanukov holds a correct position on the problem of utilizing the run of empty rolling stock on the railroads. But one cannot agree with some of his particular notions. For instance, he considers it as a defect that "in spite of considerable achievements in increasing the output of iron ore in the regions close to the Kuzbas, still some iron ore has to be delivered to the Kuznetsk works from the Urals at a distance of over 2,000 kilometers" (page 186). As it is known, when the Ural-Kuznetsk combine was planned, it was stipulated that iron ore would be brought to Siberia from the Urals, utilizing the empty cars returning to the Kuzbas after unloading the coal intended for the Ural factories. The liquidation of the haulage of iron ore from the Urals to Siberia would not make transportation more economical, but would result only in the run of empties for a considerable distance. In the future, when the new Kustanai deposits of iron ore are mastered, new perspectives will develop for the utilization of empties for delivery of the ore to the new metallurgical plants which will be founded in Kazakhstan and in Western Siberia on the basis of the Kustanai deposits of iron ore. Such shipments over long distances will be more economical than shipments over short distances in the direction in which most other freights are moved.

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E. Khanukov raises another important problem connected with that of the rational placing of new industrial enterprises and the necessity for more complete consideration of the factor of transportation. This is the problem of the economic effectiveness of different types of transport and the spheres of expedient use of these types.

In the book an economic analysis of different types of transport is given; factors affecting the cost of transportation of freight by different types of transport (depending on the types of freight and the distance of shipping) are examined; a general evaluation of capital investments and expenditure of metal and fuel are given, and the time needed for delivery of freight and the requirements in labor power on different types of transport are considered. But, when he examines the problem of the rational distribution of the flow of various freight among the different types of transport, especially in connection with the placing of new enterprises, the author makes a mistake: he does not consider how this problem is connected with the organization of the material-technical supply of the national economy and the normalization of the reserves of production in industry and capital construction. But transport is organically tied to the ma-

terial-technical supply of the national economy. The organization and the technology of transportation, determined by the peculiarities of different types of transport, have great influence on the material-technical supply of the national economy. At the same time the organization of the material-technical supply and, first of all, the normalization of the reserves of production in industry and capital construction have substantial meaning for the selection of the type of transportation.

Enumerating the factors which should be considered when selecting the type of transport (page 141), Comrade Khanukov, unfortunately, does not mention the influence of different types of transport on changes in the reserves of production in the national economy and the significance of the size of simultaneous deliveries of material resources for the selection of the type of transport. Yet the size of the reserves of production has great influence on the selection of the types of transport for the shipment of massive freight. In the opinion of the author, this factor should be among those that have to be considered when deciding the distribution of the flow of freight among different types of transport and establishing their spheres of rational use (the cost of transportation, the capital investments in transport, the kind of shipment, etc.).

Among the important economic problems of Soviet transportation are the further development and utilization of water transport, especially river, and also the improvement of the technico-economic indices of automobile transport and increasing its cooperation with railroad and other types of transport in the haulage of the freight.

When comparing the advantages and defects of river transport with the railroads in regard to the expenditure of metals, E. Khanukov comes to the conclusion that "for one and the same volume of haulage the total expenditure of metal for river boats is not much lower than for railroad rolling stock, except if wooden barges are used in river transport and in the case when the transfer of freight from the railroads to river transport results in a considerable economy in capital investment and in metal by postponing the construction of a new road or the laying of a second track" (page 156). One cannot agree with such theses.

First of all, the author limits the comparison of river and railroad transportation to the original expenditures of metal. But railroad transport requires not only a large and simultaneous expenditure of metal for the construction of the road and building the rolling stock, but also an incomparably greater expenditure of metal for the proper technical maintenance of the road and of the rolling stock.

When comparing the technico-economic effectiveness of railroad and river transport, usually the actual expenditures of metal required for the exploitation of railroad and river transport are not adequately considered. The state spends every year for the needs of railroad transport more than two million tons of metal (including more than one million tons for rails) and also about 20 million brake-shoes weighing more than 300,000 tons. This is 30 times as much metal as is used on river transport. The amount of ferrous and non-ferrous metals required by the railroads in connection with the high degree of the freight-load (the freight turnover of the railroads is 15 times higher than that of river transport) is growing much faster than in river transport.

The author did not sufficiently show the effectiveness of the development of river transport for the national economy, in particular in the Northeastern regions of our country. Whereas when evaluating the role of river transport in the national economy of the USSR and the perspectives for its development, one cannot fail to consider that in our country, with a relatively low density of the railroad network and automobile roads, the network of river communication is developed rather well.

It is enough to say that the length of the inland waterways in the USSR is 132,000 kilometers, while in all foreign countries it is 313,000 kilometers. In all the foreign countries there are 13 kilometers of inland waterways per 100,000 population, and 0.3 kilometers of such ways per 100 square kilometers area, while in the USSR there are 66 kilometers of such ways per 100,000 population and 0.59 kilometers per 100 square kilometers area.

The railroad transport of the USSR, the length of which is a little more than 10% of the length of the railroads of all the countries of the world (except the USSR), performs an enormous amount of transportation work. In comparison with the world trade total (except the USSR) the haulage of freight in the USSR constitutes 58% of the turnover, and of transportation of passengers 22%. Under such conditions the most effective use of the inland waterways of the country is a problem of great importance for the national economy. True, the natural-climatic conditions sharply lower the effectiveness of the inland waterways, but in spite of this there are wide possibilities for improving the use of such ways.

E. Khanukov occupies a contradictory position on the question of the rational distribution of the flow of freight between railroad and automobile transport, which has a very important role today, especially in connection with the overloading of many railroads by short distance shipments. For instance, on page 138 he asserts that "shipments for short distances (up to 30 kilometers) constituted only 7-8% of all the shipments by railroads (in tons). The greater part of those shipments can better be made by auto transport, and in a number of cases by special types of transport." But on page 172 he writes: "as shown by the analysis (!) if there are numerous feeding lines and a heavy turnover of freight railroad haulage at short distances very often proves to be even cheaper than auto haulage." Noting that it is expedient to transfer small amounts of freight and even car-loads from railroads to the auto transport, E. Khanukov at the same time considers that the utilization of the railroad feeding lines with a freight turnover less than five carloads per day often is very advantageous from the point of view of the national economy (page 174). Thus the author groundlessly limits the sphere of economically justified use of auto transport in our country. However, the further development of general auto transport should be directed to relieve the overloaded railroads from the transportation of freight which can be shipped more economically by auto. One should remember that about 20% of all shipments of freight by railroads are less than 100 kilometers with the average of 35-40 kilometers.

In determining the sphere of rational use of auto transport, the author was a victim of a very imperfect method of calculating the comparative technico-economic indices of railroad and auto transport. He ignores the decisive factor that consumers can be more evenly supplied by the auto transport than they can by the railroads. Besides, he forgets that auto transport under certain conditions can maintain a normal supply for the industry with smaller reserves. From the point of view of the national economy one cannot fail to consider this important circumstance. One must take it into consideration when economically justifying the sphere of use of auto transport, because with the present level of industrial production and capital construction considerable material resources are removed from the sphere of direct productive consumption.

Actually, how can one explain the seemingly contradictory situation, characteristic of practice all over the world in which auto transport, the least productive type of transport compared with all other land transport — it is the most expensive, it diverts considerable amount of labor power, it consumes more of various materials (metal, rubber, fuel) demands large capital investments — still, if compared with other types of transport, is developing at a higher tempo and attracts more and more of freight. This is explained by such advantages of auto transport as its ability to guarantee the rapid delivery of small lots of freight to consumers, and to accomplish with ease the supply of an expanding assortment of materials which is very important when specialization is being intensified.

Thus auto transport, in spite of the relatively higher capital investments and expenses involved in comparison with other types of land transport, economically is justified because it promotes the delivery of material in the sphere of productive consumption. Just this, essentially the main circumstance, is not considered in comparing the technico-economic indices of use of automobile and railroad transport. The organization of specialized bases at state farms for supplying different branches of the enterprise and the forming of fleets of automobiles for general use considerably extends the supply of materials in limited amounts from the warehouse, allows the sphere of utilization of auto transport to be expanded and relieves the railroads from repeated and irrational shipments.

One has to point out that while the author demonstrates the reat effectiveness of capital investment in the railroads he es not show why capital investment in other types of trans- rt is not sufficiently effective.

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The third group of questions on which we have to concentrate ncerns the means of further rationalization of the shipment the freight from the main branches of heavy industry and the le played by the transport factor in the placing of various anches of industry. Certainly one cannot demand that the thor make an exhaustive investigation of all the problems con- cted with the placing of socialist production and the develop- nt of transport, but one would like to find in his book an swer to the most important questions in this field

At the 20th Congress of the Party examples were given to ow the effectiveness of capital investments for mastering the w-materials and the fuel resources of Siberia. The develop- nt of the productive forces of the Eastern regions of the ntry will be accompanied by a considerable increase in the w of freight over the old Trans-Siberian and the newly con- ucted South-Siberian railroads. The problem of diffusion the products produced in the Eastern regions of the country, l in the first place in Siberia, based on the use of the cheap rces of raw materials and fuel, has exceptionally urgent im- rtance under prevailing conditions. For example, in the rectives of the 20th Congress of the Party the further intensi- ation of the tempo of development of timber-cutting and ging in the regions rich in forests was outlined. It is known t in this connection some of the timber enterprises are being fted to the Eastern regions of the country. But, the author tes: "Sometimes the opinion is expressed that the export of ber from Siberia to the European parts of the USSR is quite ional even now, because about 80% of all reserves of timber concentrated in Siberia, while in the European part only are found and about one half of this in regions where the sts serve to preserve water resources. This thesis is not e justified. Special investigations and calculations (?) wed that the reserves of wood in the Northern regions of the opean part of the USSR permit an increase in the timber- ing and logging there by tens of millions of cubic meters can satisfy almost completely the needs of the European t of the USSR for a number of years. Therefore the export rdinary kinds of timber should be considered irrational, ept the export of particularly valuable types (mast timber,) ..." (page 245).

is impossible to agree with this point of view. To discon- e the export of timber and lumber from Siberia to the ons of the European part of the USSR would require a sharp ease of timber-cutting and logging in the Northern parts of country, which are not rich in means of transportation. The or is also not right when he considers it necessary to es- ish at the Omsk railroad a dividing zone for Siberian and Urals sawn timber (page 293). This means to discontinue the rts from Siberia to the regions of the European parts of country not only of the logs, but also of the sawn timber. des, he does not say a word about how and where the enor- s forest resources of Siberia should be utilized.

ext the author touches upon an important theoretical ques- — the relations between the inter-region and intra-region ght turnover. This question at the present stage has the im- ance of principle and basically determines the perspectives e development of the transport net-work for securing regional communication. In his polemics with Professor aransky the author asserts that "the relative growth of the regional freight turnover is not an immutable law of de- pment of the Soviet economy" and that "many types of prod- could be economically produced not only in every economic n, but even intraregionally almost everywhere (agricul- produce, mineral building-materials, etc.)" (p. 101). But olume of interregional freight turnover is determined not e shipments of agricultural produce, mineral building- rials and other similar products, but, first of all, by the nents of the metallurgical, fuel, machine-building and ical industries, and to a considerable degree depends on pecialization of the economic regions. Mastering the cheap es of raw-materials, fuel, and electric power and the creation of the third metallurgic base in the Eastern part of the country, the development and strengthening of the grain-producing base in the Eastern regions of the country, the further development of the cotton-producing belt in Middle Asia, the increased extraction of coal in Vorkuta, of the valuable apatite raw-material on the Kola peninsula and manganese ore in Transcaucasia, and finally the process of specialization and extension of the cooperation in production of industries, etc. — all this leads to the intensification of interregional economic ties.

N. Baransky is right in declaring that the growth of the geographical division of labor is the greatest factor in economic progress and that "the development of the world economy as a whole and the development of the national economy of every country invariably is accompanied by the development of geographical division of labor and by the growth of differentiation of regions." *

The absolute growth of interregional economic ties reflects the deepening of the process of territorial division of labor and the specialization of economic regions and is a most important factor determining the perspectives of development of the transport system.

The problems of rationalization of the freight turnover on the railroads are determined to a considerable extent by the rational placing of the enterprises of ferrous metallurgy, because the shipments of this freight constitute more than 20% of the total freight turnover of the railroads. But the author does not attach enough importance to this question. Besides, he allows a number of mistaken ideas to pass. For instance, he writes that "in order to shorten the distance of haulage it is necessary to develop metallurgy in a number of new regions of the country (in the Far East, Kazakhstan, Middle Asia, the Volga region)" (page 195), but he does not say a word about the development of ferrous metallurgy in the regions of Eastern and Western Siberia outlined in the resolutions of the 20th Congress of the Party. The proposal of the author to develop metallurgy in the Volga region where no ore and no coal is found, sounds rather strange.

The position of the author on the problem of the shipment of apatite raw-materials is not quite clear. On one hand, he rightly states that economy of shipping is not an end in itself and therefore it is quite expedient to transport the Khibini apatites, found on the Kola peninsula, over thousands of kilometers; they contain a larger percentage of phosphorous anhydride and are the best in the world (pages 115-116). On the other hand, he wrongly considers such shipments as a result of a disparity between the volume of production and consumption by various economic regions of the country. In his opinion, the defect is in the fact that the apatite raw-material (concentrate) is shipped to some superphosphate mills "from the Murmansk region at a distance of 1.5 - 2.5 thousand kilometers" (page 247). Undoubtedly, the shipments of the apatite concentrates from the Kola peninsula will continue in the future.

On page 186 the author asserts that if the resources which are now spent for the transportation of oil-products to the Far-Eastern regions were applied to the development of the extraction of oil in the Far East, this would relieve the railroads from the long haulage of oil and its products. But it is known that for the production of one ton of oil in the Far East much larger capital investments are needed than for the production of one ton of oil in the Volga region. Besides, Comrade Khanukov does not present any data on the presence of oil deposits in the Far East and does not discuss the feasibility of mastering the exploitation of them, etc.

The author often refers to analyses and special calculations but unfortunately neither calculations nor their results are given in the book. Therefore the reader does not learn anything new when reading, for instance, the following sentence: "As the analysis and the special calculations show (?) the placing of refineries in the regions of consumption of oil products in most cases is advantageous, as far as the expenses of transport are concerned" (page 204).

(Continued on Page 69)

* N. Baransky, "The Economic Geography of the USSR." 1927, p. 38.

M. Sidorov:

The Question of Financing Industrial Construction

In the directives of the 20th Congress of the Communist Party of the Soviet Union the growth of industrial production for 1956-1960 was established at approximately 65%. Furthermore, four-fifths of the increase of industrial production is to be guaranteed by increased productivity of labor. The creation of new industrial units through investment is planned for as well. For 1958 alone, the scope of government investments amounts to 198.8 billion rubles. Moreover, hundreds of large, new industrial enterprises will be put into operation. In connection with the serious increase in the scope of building new works and factories the question of increasing the effectiveness of important investments in industrial construction takes on greater importance than ever before.

It is well known that during recent years the scattering of means over a multitude of constructions, and the dispersion of the front of capital works were tolerated. This resulted in the prolongation of terms of construction, in its becoming more expensive, and in the disruption of the dates set for new objectives. Freezing of government means and an increase in the amount of unfinished construction were also consequences. This was one of the causes for the appearance of certain disproportions in the national economy. Even in ferrous metallurgy the scattering of investments and extreme delays in construction of very important objectives have become common occurrences. Thus in the construction of the Orsk-Halilovsk metallurgical combine, which was begun a long time ago, 1.3 billion rubles were invested prior to January 1, 1957. However only four coke batteries, one blast furnace, and two Bessemer converters were put into operation. The construction of an open-hearth (Martin) furnace unit was only begun; the construction of a rolling mill sections was not even started, although a substantial part of material ready for rolling has been lying several years in the yards of this factory. The building of the Karagandinsk metallurgical plant is now in its 11th year, and for this period the scope of performed work constitutes less than 15% of its prime cost. As a result of poor organization of construction and scattering of means on many objectives, the plan of opening new rolling mills was unfulfilled in the years of the Fifth Five-Year Plan by 4.8 million tons, and for 1956 — by 1.1 million tons. For similar reasons in 1956, 67 coal mines were not put into operation and cement factories were short 3 million tons of cement.

On the level of manufacturing branches of industry, also, government investments are used irrationally. For instance, such an important objective as the Smolensk flax mill combine has been under construction for 10 years, and is not yet completed. In 1956, factories for the production of reinforced concrete construction for a total output of 3.5 million cubic meters were not put into operation.

In recent years, the construction of auxiliary shops at functioning works has increased and thereby has lowered the effectiveness of government investments. This is caused by the inadequate level of development of specialization and cooperation of enterprises and also by the expansion of such industries (metal processing, in particular) which at present are not supplied with raw material in proper quantity. For example, the Gorki Automobile Plant in 1956-57 could have manufactured considerably more automobiles than it in fact did, if it had been fully supplied with all the necessary kinds of metal. A similar situation in the use of productive forces was observed in several other auto factories despite the fact that large means are invested every day into the expansion of automobile production.

The directors of many enterprises strive to get more investments for the increase of production, not only for the lessening of dependence upon other enterprises, but also in order to provide work for workers freed as a result of the perfection and automation of production. Organized over-distribution of labor resources throughout the economic districts under present conditions is still a very difficult problem.

The failings in the planning of investments lead many directors of enterprises to strive to obtain as many allocations for expansion of production as possible. For this purpose, a substantial number of new objectives and buildings are begun with the help of small investments and with the design that in the following year the planning organs will assign funds for the continuation of such previously started constructions. The scattering of government investments over many objectives under construction is also caused because enterprises receive technical documentation from project organizations gratis. The fact that the budget carries maintenance project organizations for long periods leads to the accumulation of a great quantity of technical documentation unused by enterprises which becomes useless after some time.

Conditions for the shift of project organizations to cost accounting have been proper for a long time — and also for the preparation by them of technical documentation in consultation with the enterprises. The ceaseless flow of investments into functioning enterprises (even into some which have been working for a long time) is also conditioned by the fact that compound estimates for projected goals or technological projects for the construction of enterprises are kept and investments for industrial construction continue to be assigned to unused remains of compound estimates. Several old enterprises, such as the Leningrad Kirov plant of the Cheliabinsk tractor works, keep unclosed the compound estimates of reconstruction which were drawn according to projects which were worked out many years ago.

The reconstruction of the administration of industry and construction into economic administrative districts has created favorable conditions for the utilization of the huge reserves of which our industry disposes. Economic councils will lead a decisive struggle against the dispersion of investments over many constructions and will permit the concentration of means and important new objectives.

In certain economic councils, local tendencies may appear directed at the limiting and narrowing of outside industrial cooperation which exceeds the limits of the economic council at the expense of the creation of new secondary auxiliary industries. The economic council must be entrusted with investments for the expansion of industrial forces only under the condition that it has shown the reserves of which the industrial enterprises subordinated to it dispose and has worked out a concrete plan to utilize them in a very short time. This will lead in the first place to a rise in industrial production. Thus, serious doubts arise at the request of the Sverdlovk Economic Council for 4.6 billion rubles for 1958 with a planned increase of industrial production of the enterprises of the Economic Council of 1.5% when compared with the 1957 level. After all, the enterprises of this economic council may, and must, get an increase in industrial production in 1958, because of the increase of the productivity of labor and the mobilization of industrial reserves alone, without the erection of new industrial units. It is essential to analyze thoroughly the requests for investment of several other economic councils. Thus, the needs of the Cheliabinsk Economic Council for investments for the year 1958 are determined by it at four billion rubles, while the growth of gross production is planned in the scope of only five per cent. In presenting such a claim for investments for 1958, the Cheliabinsk Economic Council simultaneously estimates in its projected plan the increased scope of uncompleted construction at 600 million rubles. The Perm Economic Council in planning the increase of gross production for 1958 at 5.5% over the 1957 level, has demanded to be assigned investments totaling 3.4 billion rubles. Undoubtedly at the enterprises of these economic councils there are "weak spots" and equivalent sums must be invested in order to liquidate them. The figures quoted here, however, show that some economic councils continue to present claims for investments deliberately overstated.

t the Sixth session of Supreme Soviet of the USSR, it was
ed that due to the presence of industrial forces the plan es-
lished for 1957 concerning manufacturing industry may be
rfulfilled. It was indicated that the machine building industry,
t is supplied with metal and other materials in large quanti-
, would produce more than several billion rubles of output
ve the plan, and that industry producing goods for national
sumption can also increase its output over the planned
ount if the resources of wool, leather, cotton, and other raw
erials are increased.

t the Seventh session of the Supreme Soviet of the USSR, it
mentioned that a substantial part of machine building plants
nder the direction of separate ministries and is over-charged
resent by 70%-80% and that in the foodstuffs and other light
stry, which are wanting in technological equipment, special
hine building enterprises are created.

nder new conditions of organization of the administration of
stry and construction, it is easier to fight against irrational
zation of government investments which leads to the freez-
of huge means and of material resources, to inactivity of
itting during prolonged periods of time and the construction
jectives quite ineffective for the satisfaction of the interests
ne nation as a whole.

arx showed that in a socialist society the whole economy is
ced in the final analysis to the economy of working time.
scales of the economy of working time determine the tempo
e development of the productive forces of society. Invest-
ts must be directed to the construction of only those enter-
es and objectives which are truly needed for the develop-
t of the national economy. The construction of these enter-
es and objectives must be completed in the shortest possible
, at the lowest cost, and with the application of the most
ern technology.

is our opinion that the present system of planning invest-
s for industrial construction must be changed and a new one
duced. At its basis there should be the principle of the re-
ent of investments in the briefest possible time. This will
ply increase the responsibility of the collectives of enter-
es for the economic effectiveness of new investments. It
d be necessary for this to change from a termless form of
g credit to industrial construction to one which would set
s. Each enterprise would then liquidate credits in the short-
me at the expense of amortization payments, accumulations
the plan, and other financial resources of enterprises.

e application of the system of financing industrial produc-
which we propose would, in the first place, lead to the nar-
g and subsequently to the stopping of economically ineffec-
nvestments. The extent of means of which banks, which are
edit industrial construction at functioning enterprises in the
1958-1960, are to dispose must be limited, especially when
facturing industry is concerned.

e existing system of planning and financing industrial con-
tion should be kept for the construction of new enterprises.
is important, moreover, that the planning organs be
ly guided by the directed norms for the continuance of construction of enterprises, objectives, and units established February 7, 1956, at the request of the Council of Ministers of the USSR, the Gosstroy of the USSR, the Gosplan of the USSR, and the Goseconom Commission of the USSR. At the present time, the planning of investments is in fact not guided by these norms.

For the practical realization of the indicated proposal, it is fitting in drawing up yearly national economic plans to exclude from the department of new industrial construction investments destined for industrial construction at already functioning enterprises. Accordingly, in yearly financial plans, funds singled out for the crediting of measures for the introduction of new technology and modernization of equipment must be increased by a sum such as the economic councils will be able to return to the crediting banks in three or four years without the lowering of instalment payments planned for the economic councils to budgets of the Union and of the Republic. Furthermore, the right to distribute these credits to different economic councils must be given to the Councils of Ministers of the Union Republics. Within the limits placed upon the economic council for the crediting of industrial construction at functioning enterprises, the latter, in conjunction with the regional office of the Prombank determines to what enterprises, for what ends, in what proportion, and at what terms credit must be given with corresponding obligation from the enterprise and guarantee from the economic council.

If there is a violation by the enterprise of the term set for the liquidation of the credit, the regional office of the Prombank must have the right to receive the sum of the instalment due from the account of the enterprise in the local branch of the Gosbank. If such violations are repeated, all the credit given to the enterprise must be exacted before the end of the term. The economic councils must be granted the power to set limits upon labor and the wage fund of enterprises which have received credit for industrial construction.

The problem of providing given credits with materials for which funds are needed (metal, cement, pipes, lumber, glass, roofing, electro-materials, et al) will be the most difficult when the system which we recommend of financing industrial construction at functioning enterprises is introduced. Without funds for these materials, enterprises will be deprived of the possibility of realizing the credit received from the Prombank for industrial construction. Therefore, the Gosplan of the USSR must distribute funds for these materials among the Union Republics, taking into consideration the credit which is intended to be granted to functioning enterprises for industrial construction according to specially conceived norms. The Gosplans of the Union Republics will distribute these funds to the economic councils under the condition that they apportion them to enterprises according to the already formulated and granted credit of the Prombank.

The necessity for the introduction of a new system of financing industrial construction is dictated by life. These rules will allow the economic councils to radically increase the effectiveness of investments in industrial construction and, thus, economize considerable government means.

D. Ton:

Economic Surveys of the Komi Branch, USSR Academy of Sciences

The former Northern borderland of tzarist Russia, the Komi region, is today an industrial and collective farm Republic which possesses a wide network of transport routes of different kinds and a developed socialist agricultural economy. Here, new branches of industry have appeared — coal (the Pechorsk basin), petroleum (the Ukhtinsk district), wood and metal processing, foodstuffs, et al. In comparison with 1913, the gross production of Komi's large-scale industries rose 84 times; moreover, 90% of it is produced by branches of heavy industry.

An important role on the level of the national economy is played by the Pechorsk coal basin — a large fuel base of the European North and North-West of the USSR. In accordance with the plan of cooperative supply, the Republic sends to other regions of the country coal, lumber, petroleum and products of petroleum and gas processing such as kerosene, lubricants, etc. The Komi ASSR possesses great potential possibilities for the future development of an important fuel, lumber and construction industry. In its territory lie large coal deposits, gas resources, mineral raw materials; the riches of its forests are also great.

It is essential to note that the reconstruction of the administration of industries and construction has already helped to better utilize new industrial reserves for the development of the economic life of the Komi ASSR. Before the creation of an economic council the industrial enterprises in the Komi Republic were subordinated to 30 ministries and departments, some of which directed one or two enterprises only. This often hurt the effective operation of outfitting, caused cargoes to cross with one another and considerably slowed down the correct resolution of problems of specialization, cooperation and combined development of the national economy. Comrade N. S. Khrushchev, speaking at the Seventh Session of the Supreme Soviet concerning the necessity of creating an economic council in the Komi economic district, stressed that the growth of industry in the Republics, territories and districts was complicated (as it was the case in the Komi Republic) by the economic administration and that therefore it was now necessary to change to a system of industrial and construction administration based on the territorial principle. The organization of an economic council in the Komi Republic has strengthened and widened the productive connection of the branch of the USSR Academy of Sciences with industry. The branch takes an active part in the work of the economics department of industry — coal, petroleum, gas, lumber, construction, geology — and actively contributes to the publication of the monthly technico-economic bulletin of the Komi ASSR Economic Council.

The research of the branch is concentrated upon working out the most important and actual problems of growth of the economy of the Republic. A particular role in the economic life of the Komi ASSR and of the whole European North is played by the Pechorsk industrial sector. Three-fourths of the principal aspects of production of the Republic are concentrated here, including all the coal, petroleum and gas industries as well as a great part of the forest industry. Yet the enormous natural riches of the basin are far from being completely utilized; in certain branches there are partial disproportions. Thus, the coke-producing Pechersk coal has not yet found access to the Ural metallurgical plants. The Department of Economics investigates the principal directions taken by the development of industry and transport of the Pechersk region. On the basis of a detailed study of its economic problems and of inter-branch and inter-regional relations, the paths for the future combined development of these branches of economy become apparent, with the goal of an Uralo-Pechersk coal-metallurgical base in mind.

Research on the subject of the regional complex which hitherto was conducted in the Pechorsk economic zone has been expanded. Before the economists lies the problem of working out the hypothesis of the economic development of the Komi Republic in a perspective of 15-20 years with the aim of solving the Uralo-Pechersk problem and creating the Kamo-Pechoro-Vichegodsk water economy complex.

Another direction taken by the work of the economics department of the branch is the study of intra-productional reserves. Decisive conditions for the future increase in coal, petroleum and lumber production, for the lowering of the cost of production and increasing the profitableness of the enterprises — are the ceaseless growth of the productivity of labor on the basis of the introduction of new technology, the increase in the level of its utilization and the improvement of the organization of production. The utilization of internal productive reserves is a subject which has been studied since 1956.

Since the creation of an economic council in the Republic much attention has been given to the combined development of the national economy and in particular to the improvement of a local provision base which must satisfy the demands of the ever growing city population. Under the conditions of the Extreme North this problem is particularly vital. In order to establish the level and the economic effectiveness of the production of agricultural products and plan the principal ways to strengthen and develop a provision base around the industrial centers in a perspective of 15-20 years, the Department of Economics of the branch studies the characteristics of the development of suburban agriculture in the North.

The following subjects are included in the research plan of the department of economics of the Komi branch: "The principal trends of the development of industry and transport in the Komi economic district (1955-1956);" "The productivity of labor and how the production of coal and lumber in the Komi economic administration district may be increased (1956-1959);" "How to strengthen and develop a provision base around the industrial centers of the Komi economic administration district (1957-1959)." The subjects considered by the Department of Economics of the filial embrace all academic sciences and enter into the plan of coordinated work on the problems of the "Specialization and combined development of the economy of economic districts" and "The productivity of labor and ways to increase it."

From the first days of the organization of an economic council in the Republic, a creative relationship was established between economists and other members of the filial, on one hand, and with the workers of the Economic Council and of various sections of the technico-economic council on the other.

The scientist-members present to the workers of industry the results of their investigation in the form of printed material, reference work and memoranda; they take an active part in the work of the sections of the technico-economic council, in conferences on the subject of the problems of developing the economy and the utilization of intra-production reserves. Many members of the Economic Council and of industry, in their turn, help and often take a direct part in the working out of scientific research subjects.

For greater strengthening of the relationship with industry the presidium of the branch has made arrangements for creative cooperation with the coal, petroleum and other industrial combinations. For joint study of the most vital problems of the future development of the economy, the presidium has created commissions which deal with the problem of combined utilization of natural resources in the Pechorsk coal basin and the Ukhtin industrial center. In Vorkut and Ukhtin, four conferences took place at which after serious preparation men from industry also made reports. The materials of these conferences are published in separate collections by the branch. In 1957 for instance, the following works were published: "Problems of the Increased Productivity of Labor and of Reduction of Costs of Operation of Coal Production at the Mines of the Pechorsk Basin," "Prob-

ms in Developing the Pechorsk Coal Basin." The collection Problems of the Development of the Ukhtin Industrial Center" in print. Such a form of creative cooperation has proved to be ly justified.

Among the books and pamphlets published in 1956-1957 which ay be used by the Economic Council and its economic organi- tions, one may mention "Essays on the Development of Indus- y in the Komi ASSR," "Industrial Exploitation of the Forests the Vichegda Basin," "The Potential Growth of the Productivity Labor in the Lumbering Establishments of the Komi ASSR," ow the Cost of Lumber Production is to be Lowered," "Per- ectives for the Creation of a Milk-Vegetable Base on the chora," etc. Works treating the economics and problems of velopment of the coal and petroleum industry, prepared in laboration with the engineering and technological personnel of these branches of economy, are also related to this group of publications.

The Department of Economics of the branch actively aids in the generalization of advanced experiment at the enterprises. Thus, in the second half of 1957, the following brochures were published: "The Effectiveness of a New Organization of Labor at Lumber Producing Units," "The Experiment of the Makarovsk Exploration of the 'Vichegdosplav' Trust," "The Organization of Industry and Labor on the Basis of Small Combined Brigades."

At present the members of the Economics Department take an active part in the work of the technico-economic section of the council and divisions of the Economic Council. They help to determine the principal directions of the perspective plan for developing the economy of the Komi economic administration district for the years 1959-1965.

OLDOMASOV (Continued From Page 65)

Underlining the importance of the factor of transportation placing the various branches of industry, E. Khanukov un- tunately does not set forth the other technico-economic ices which should be considered in placing production. n spite of certain shortcomings pointed out above, the book of E. D. Khanukov as a whole should be considered positively. The author accomplished a big and fruitful task. Undoubtedly, the book will help to improve the practice of planning the placing of production on the basis of considering the transport factor.

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